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UNIVERSITY OF MADRAS

THE CALENDAR FOR 1937-38

VOL. I

PART II

**Ordinances, Regulations, Syllabuses and
Text-books relating to University Examinations.**

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CONTENTS.

VOL. I—PART II.

	PAGE.
Calendar for 1937-38.	... 1-18
ORDINANCES AND REGULATIONS.	
CHAPTERS.	
XXX. Register of Matriculates	... 19
XXXI. Admission of holders of S. S. L. C. and E. S. L. C. to University Courses of Study	... 20
XXXII. Admission to Courses of Study	... 24
XXXIII. Conduct of Examinations	... 28
XXXIV. Fees	... 31
XXXV. Dates for Payment of Examination fees, etc.	... 39
XXXVI. Transfer and Term or Annual Certificates	... 47
XXXVII. Admission to Examinations and Exemption from Annual or Term Certificates	... 52
XXXVIII. Matriculation Examination	... 59
XXXIX. Intermediate Examination in Arts and Science	... 64
XL. Degree of Bachelor of Arts	... 73
XLI. Degree of Bachelor of Arts (Honours)	... 101
XLII. M. A. Degree Examination	... 127
XLIII. Degree of Master of Letters	... 128
XLIV. Degree of Doctor of Letters	... 131
XLV. Degree of Bachelor of Science (Pass)	... 133
XLVI. Degree of Bachelor of Science (Honours)	... 146
XLVII. Degree of Master of Science	... 167
XLVIII. Degree of Doctor of Science	... 170
XLIX. Degree of Bachelor of Laws	... 172
L. Degree of Master of Laws	... 176
LI. Degree of Doctor of Laws	... 181
LII. Degree of Medicine and Surgery	... 182
LIII. Degrees of Doctor of Medicine and Master of Surgery	... 196
LIV. Diploma in Midwifery	... 199
LV. Degree of Bachelor of Sanitary Science	... 201
LVI. Degree of Bachelor of Engineering	... 207
LVII. Degree of Licentiate in Teaching	... 213
LVIII. Degree of Bachelor of Science in Agriculture	... 215
LIX. Degree of Bachelor of Veterinary Science	... 219
LX. Degree of Bachelor of Commerce	... 223
LXI. Titles, Certificates of Proficiency, and Degrees in Oriental Learning	... 227

CHAPTERS—(contd.)	PAGE.
LXII. Diploma Courses ...	264
(1) Diploma in Economics ...	264
(2) Diplomas in French and German ...	266
(3) Diploma for the Certificate Course in Librarian- ship ...	268
(4) Diploma Course in Geography ...	271
(5) Diploma in Indian Music ...	273
LXIII. Transitory Regulations ...	275
APPENDICES.	
I. Syllabuses and Text-books for the Matriculation Exa- mination ...	295
II. Syllabuses and Text-books for the Intermediate Exa- mination in Arts and Science ...	316
III. Syllabuses and Text-books for the B.A. Degree Exa- mination. ...	369
IV. Syllabuses and Text-books for the B.A. (Honours) Degree Examination. ...	483
V. Syllabuses and Text-books for B.Sc. Degree Exa- mination ...	590
VI. Syllabuses and text-books for B.Sc. (Hons.) Degree Examination ...	608
VII. Text-books for Examinations in Law ...	635
VIII. Syllabuses for courses of study in Medicine ...	650
IX. Syllabuses for courses of study in Sanitary Science...	662
X. Syllabuses for courses of study in Engineering ...	669
XI. Syllabuses for the L.T. Degree Examination ...	693
XII. Syllabuses for the B.Sc. Degree Examination in Agriculture ...	708
XIII. Syllabuses for the B. V. Sc. Degree Course* ...	725
XIV. Text-books for Examinations for Oriental Titles ...	756
XV. Syllabuses for the Optional Divisions for Certificates of Proficiency ...	815
XVI. Syllabuses and Text-books for the Diploma Courses:—In French and German ...	823
In Geography ...	824
In Indian Music ...	827
XVII. Form of Annual Certificates ...	831
XVIII. Courses of Studies in Arabic, Persian and Urdu for the O. T. Exams. of 1937 and 1938 ...	849
XIX. Rules for award of Prizes for the encouragement of publications of works on modern subjects in Dravidian Languages ...	851
XX. Time-Tables for Examinations ...	853
XXI. List of University Publications ...	913
INDEX ...	928

THE CALENDAR FOR 1937

JULY

1	Th	Half-yearly closing of Bank Accounts—(Holiday). Last day for receiving attendance certificates for the Examinations for the Diploma in French and German. Last day for receipt of applications for Research Studentships.
2	F	Certificate in Librarianship Examination.
3	S	
4	Sun	
5	M	
6	Tu	
7	W	
8	Th	
9	F	Meeting of the Syndicate.
10	S	
11	Sun	
12	M	Diploma in French Examination. Last day for receiving attendance certificates for B.S.Sc., Part II Examination.
13	Tu	Diploma in German Examination.
14	W	
15	Th	Last day of registration for September Intermediate, B.A., B.A. (Hons.) Preliminary, B.Sc., B.Sc. (Hons.) Part I, B.Sc. (Hons.) Part, II Subsidiary, L.T., F.L., B.L. and D.G.O. Examinations. Last day for receiving attendance certificates for D.G.O. Examination.
16	F	
17	S	
18	Sun	University of Bombay, Incorporated, 1857.
19	M	M.A. and B.S.Sc. Part II Examinations. Publication of results of Examination for Certificate in Librarianship and B.V.Sc. Preliminary Examination.
20	Tu	
21	W	
22	Th	University of Mysore, Incorporated, 1916.
23	F	
24	S	Holiday.
25	Sun	
26	M	
27	Tu	
28	W	
29	Th	
30	F	CONVOCATION.
31	S	Do.

Late applications for Examinations with an additional fee of Rs. 1 will be accepted within five days after the prescribed date.

AUGUST

1	Sun	Last day for receipt of reports from colleges regarding subjects and courses which have not been opened in the year for want of students.
2	M	
3	Tu	
4	W	
5	Th	
6	F	Last day for the submission of Return of Staff as on 1st August 1937.
7	S	
8	Sun	
9	M	Publication of results of B.S.Sc. (Part II) and Diploma in French and German Examinations.
10	Tu	
11	W	
12	Th	
13	F	Special Meeting of the Syndicate.
14	S	Ordinary Meeting of the Syndicate.
15	Sun	
16	M	
17	Tu	
18	W	
19	Th	Last day for receiving attendance certificates for Intermediate, B.A., B.A. (Hons.) Preliminary, B.Sc., B.Sc. (Hons.) Part I, B. Sc. (Hons.) Part II Subsidiary and L. T. Examinations.
20	F	<i>Onam</i> (Holiday).
21	S	<i>Avani Avittam</i> (Holiday).
22	Sun	
23	M	
24	Tu	
25	W	
26	Th	
27	F	Meeting of the Academic Council.
28	S	
29	Sun	<i>Sri Jayanti</i> (Holiday).
30	M	
31	Tu	

SEPTEMBER

1	W	Last day for receiving applications for pass certificates of Inter. Examination of March 1937.
2	Th	
3	F	
4	S	Meeting of the Syndicate
5	Sun	University of Madras, Incorporated, 1887.
6	M	Publication of results of M. L. Examination.
7	Tu	
8	W	The Indian Universities Act, 1904, came into force in the University of Madras, 1904. <i>Vinayaka Chathurthi</i> (Holiday).
9	Th	
10	F	
11	S	
12	Sun	
13	M	Inter., B.A. (Part I), B.A. (Hons.) Prelim., B.Sc. (Part I), and B.Sc. (Hons.) Part I Examinations. Last day for receiving attendance certificates for F. L. and B. L. Examinations.
14	Tu	
15	W	B. A. Part II Examination. Lunar Eclipse.
16	Th	B.A. Part III, B.Sc. Part II and L. T. Examinations.
17	F	
18	S	B.Sc. (Hons.) Part II—Subsidiary Examination. Holiday.
19	Sun	
20	M	
21	Tu	
22	W	
23	Th	
24	F	
25	S	
26	Sun	
27	M	F. L. and B. L. Examinations.
28	Tu	
29	W	St. Michaelmas Day.
30	Th	Last day for receipt of applications for exemption from <i>bona-fide</i> teachers to appear for Matric, Inter. and B. A. Examinations, and from other private candidates for Matric. and O. T. Examinations March 1938.

OCTOBER

1	F	University of Patna, Incorporated, 1917. Last day of registration for the B.V.Sc. Preliminary Examinations.
2	S	
3	Sun	
4	M	<i>Mahalaya Amavasai (Holiday).</i>
5	Tu	
6	W	
7	Th	
8	F	Special Meeting of the Syndicate Last day of registration for Pre-Registration, First, Second and Final M.B. & B.S. Examinations.
9	S	Meeting of the Syndicate
10	Sun	
11	M	D. G. O. Examination.
12	Tu	
13	W	
14	Th	University of Punjab, Incorporated, 1882. Ayudha Pujah (Holiday.)
15	F	Last day of registration for B.S.Sc. Part II, Examination.
16	S	
17	Sun	
18	M	
19	Tu	
20	W	<i>Shabe Barath.</i>
21	Th	
22	F	
23	S	Holiday.
24	Sun	
25	M	Publication of results of Inter., B. A., B. A. (Hons.) Prelim., B.Sc., B.Sc. (Hons.) Part I and Part II Subsidiary and L. T. Examinations.
26	Tu	
27	W	
28	Th	
29	F	Meeting of the Senate The Madras University Amendment Act of 1929 came into force.
30	S	
31	Sun	Last day for receipt of applications and theses for M.Litt., M.Sc., D.Litt., D.Sc., and M.O.L. Degree Examinations. Last day for receipt of applications from Institutions for recognition, affiliation or approval in any University Courses from the following Academic year.

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

THE CALENDAR FOR 1937.

NOVEMBER

1	M	Publication of results of D.G.O. Examination. Last day for receipt of applications for permission under Transitory Regulations to appear for Inter. and B.A., Examinations.
2	Tu	<i>Deepavali</i> (Holiday).
3	W	
4	Th	
5	F	
6	S	Ordinary Meeting of the Syndicate.
7	Sun	
8	M	Publication of results of F.L. and B.L. Examinations. Last day for receiving attendance certificates for B.V.Sc. Preliminary Examination.
9	Tu	
10	W	
11	Th	
12	F	
13	S	
14	Sun	
15	M	Last day for receiving attendance certificates for First, Second and Final M.B. & B.S. and B. S. Sc. Part II Examinations. Last day of Registration for O. T. Examinations, and B.O.L. Degree Examination.
16	Tu	University of Allahabad, Incorporated, 1887.
17	W	
18	Th	Karthikai Deepam.
19	F	
20	S	Holiday.
21	Sun	
22	M	First, Second and Final M.B. & B.S. and B.S.Sc. Part II and B.V.Sc. Preliminary Examinations.
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	Sun	
29	M	
30	Tu	

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

DECEMBER

1	W	<p>Last day of registration for B.S.Sc Part I (January 1936) and LL.D. Examinations, 1938.</p> <p>Publication in the "Gazette of India" in 1904, of the Chancellor's Declaration that the Body Corporate of the University of Madras had been constituted in accordance with the provisions of the Indian Universities Act, 1904.</p> <p>University of Rangoon and Muslim University Aligarh, Incorporated, 1920.</p>
2	Th	Last day for receiving attendance certificates for Pre-Registration Examination.
3	F	
4	S	
5	Sun	
6	M	<i>Ramzan</i> (Holiday).
7	Tu	
8	W	
9	Th	
10	F	Pre-Registration Examination.
11	S	Ordinary Meeting of the Senate.
12	Sun	
13	M	
14	Tu	King George VI Born 1895.
15	W	Last day of registration for Matriculation, B.Sc. Part II, B.A. (Hons.) Final, M.A., and B.Sc. (Hons.) Part II Examinations, March 1938.
16	Th	University of Lucknow, Incorporated, 1920.
17	F	
18	S	Holiday.
19	Sun	
20	M	Publication of the results of First, Second and Final M.B. & B.S., B.S.Sc. Part II and B.V.Sc Preliminary Examinations.
21	Tu	
22	W	
23	Th	
24	F	<i>Christmas Vacation</i> (Holiday)
25	S	Do. do. Christmas Day.
26	Sun	Do. do.
27	M	Do. do.
28	Tu	Do. do.
29	W	Do. do.
30	Th	Do. do.
31	F	Do. do.

THE CALENDAR FOR 1938

JANUARY

1	S	<i>Christmas Vacation</i> (Holiday). New Year's Day. Annamalai University, Annamalai-nagar, Incorporated, 1929.
2	Sun	<i>Christmas Vacation</i> (Holiday).
3	M	Office re-opens. Last day for receiving attendance certificates for B.S.Sc. (Part I) Examination.
4	Tu	
5	W	Publication of results of Pre-Registration Examination.
6	Th	
7	F	
8	S	
9	Sun	
10	M	B.S.Sc. Part I Examination. Last day of registration for Inter., B.A., B.A. (Hons.) Preliminary, B.Sc. Part I and B.Sc. (Hons.) Part I, March 1938 Examination.
11	Tu	
12	W	<i>Vaikunta Ekadesi</i> (Holiday)
13	Th	<i>Bhogi Pandigai</i> (Holiday).
14	F	<i>Pongal Pandigai</i> (Holiday).
15	S	Last day of registration for F.L., B.L., M.L., Engineering, Pre-Registration, First, Second and Final M.B. & B.S., M.D., M.S., D.G.O., B.Sc. Ag., L.T., Dip. in Economics, Geography and Indian Music Examinations, April 1938. Last day for receiving attendance certificates for M.D., M.S. and D.G.O. Examinations, April 1938. University of Calcutta, Incorporated, 1857.
16	Sun	
17	M	
18	Tu	
19	W	
20	Th	Last date for the submission of the Return of Staff as on 15th January.
21	F	
22	S	Holiday.
23	Sun	Andhra University, Incorporated, 1926.
24	M	Publication of results of B.S.Sc., Part I Examination.
25	Tu	
26	W	
27	Th	
28	F	
29	S	Ordinary Meeting of the Syndicate.
30	Sun	
31	M	Last day for receipt of applications for admission to Certificate in Librarianship course.

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

FEBRUARY

1	Tu	Last day for receiving applications for pass certificates of Intermediate Examination of September 1937.
2	W	
3	Th	
4	F	
5	S	
6	Sun	
7	M	
8	Tu	
9	W	
10	Th	Meeting of the Academic Council
11	F	
12	S	<i>Bakrid</i> (Holiday).
13	Sun	
14	M	
15	Tu	
16	W	
17	Th	
18	F	CONVOCATION (Provisional)
19	S	Meeting of the Syndicate
20	Sun	
21	M	
22	Tu	
23	W	
24	Th	
25	F	
26	S	Holiday
27	Sun	
28	M	Madras University Act VII of 1923 received the assent of the Governor of Madras. <i>Mahasivarathari</i> (Holiday).

MARCH

1	Tu	Last day for receipt of applications for exemption from <i>bona-fide</i> teachers to appear for Intermediate and B. A. Examns. September, 1938. Last day of registration for B.S.Sc. Part I and B. V.Sc. Preliminary and Intermediate Examinations. <i>Ash Wednesday</i> (Holiday).
2	W	
3	Th	
4	F	
5	S	
6	Th	
7	M	
8	Tu	
9	W	Last day for receiving attendance certificates for Intermediate, B.A., B.Sc., B.A. (Hons.), Prely. and Final, B.Sc. (Hons.), Parts I & II and O. T. Examinations.
10	Th	
11	F	
12	S	<i>Day of the Ashura</i>
13	Th	<i>Muharram.</i> (Holiday.)
14	M	Last day for receiving attendance certificates for Engineering Examinations.
15	Tu	Last day for receiving attendance certificates for L. T. Examination. Last day of Registration for the Examinations for Diploma in French and German.
16	W	Last day for receiving attendance certificates for Matric. Examination.
17	Th	
18	F	
19	S	Last day for receiving attendance certificates for B.Sc. Ag., & Dip. in Economics Examns. (Holiday).
20	Th	
21	M	The Indian Universities Act, 1904, received the assent of the Governor-General.
22	Tu	
23	W	
24	Th	
25	F	<i>Annual Meeting of the Senate.</i>
26	S	
27	Th	
28	M	Matric., Inter., B.A. Part I, B.A. (Hons.) Preliminary and Final, M.A., B.Sc. Part I, B.Sc. (Hons.) Part I and Part II Main, Engineering and O. T. Examns. Last day for receiving attendance certificates for Pre-Registration, First & Second M.B. & B.S. Examns.
29	Tu	
30	W	Madras University Act VII of 1923 received the assent of the Governor-General.
31	Th	Last day for receipt of applications and theses for M.Litt., M.Sc., D.Litt., D.Sc. and M.O.L. Examinations.

Note.—The scheme of examination is subject to alterations to be notified in the Gazette in November 1937 and February 1938.

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

APRIL

1	F	<i>Telugu New Year's Day</i> (Holiday).
2	S	Hindu University, Benares, Incorporated, 1916. B.A. Part II, and L. T. Examinations. Last day for receipt of applications for permission under Tran. Reguln. to appear for Inter. & B.A. Examinations September 1938.
3	Sun	
4	M	* B.Sc. Part II, Pre-Registration, First and Second M.B. & B.S., M.D., M.S. and B.Sc. (Ag.) First & Second Examinations. Last day for receiving attendance certificates for F.L., B. L., Diploma in Indian Music, Geography, Final M.B. & B.S. and B.S.Sc. Part I Exams.
5	Tu	B.A. Part III Examinations.
6	W	
7	Th	B.Sc. (Hons.) Part II Subsidiary Examinations.
8	F	
9	S	
10	Sun	
11	M	B.Sc. Ag. Final, Final M. B. & B. S., B. S. Sc. Part I, D. G. O., Diploma in Economics, Indian Music and Geography Examinations.
12	Tu	
13	W	<i>Tamil New Year's Day</i> (Holiday).
14	Th	} (Maundy Thursday). Easter Holidays begin. <i>Good Friday.</i>
15	F	
16	S	
17	Sun	} Easter Holidays.
18	M	
19	Tu	
20	W	Office Reopens. Publication of results of Pre-Registration, First and Second M.B. B.S. Examinations, F.L. and B.L. Examinations.
21	Th	
22	F	
23	S	Holiday.
24	Sun	
25	M	Publication of results of B.S.Sc. (Part I) Examination.
26	Tu	Andhra Univ. *sity, Inaugurated, 1926.
27	W	
28	Th	
29	F	
30	S	Meeting of the Syndicate.

* Subject to alteration to be notified in the Gazette in November 1937 and February 1938. Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

MAY

1	Sun	University of Delhi, Incorporated, 1922. The Madras University Act, 1923, came into force
2	M	Publication of results of Engineering, Final M.B. B.S., M.D., M.S. and D.G.O. Examinations.
3	Tu	
4	W	
5	Th	
6	F	
7	S	
8	Sun	
9	M	Publication of results of B.A. (Hons.) Final and M.A. Examinations.
10	Tu	
11	W	
12	Th	
13	F	<i>Meeladi Nabi</i> (Holiday).
14	S	
15	Sun	Annamalai University Act, 1928, all Sections came into force. Last day for the submission of Dissertation for Diploma in Geography.
16	M	Publication of results of Matric., Intermediate, B.Sc. (Hons.) Part II Main and B.Sc. (Ag). Examinations.
17	Tu	
18	W	
19	Th	
20	F	
21	S	Madras University—Appointment of the First Vice-Chancellor under the Act of 1923. (Holiday).
22	Sun	
23	M	Publication of results of B.A., B.A. (Hons.) Prelimi- nary, B. Sc., B.Sc. (Hons.) Part I and Part II Sub- sidiary, L.T., O. T., Diploma in Economics, and Indian Music Examinations.
24	Tu	<i>Empire Day</i> (Holiday).
25	W	
26	Th	Queen Mary Born, 1867.
27	F	
28	S	
29	Sun	
30	M	
31	Tu	

JUNE		
1	W	Last day of registration for B.S.Sc., Part II and certificate in Librarianship Examinations.
2	Th	University of Nagpur, Incorporated, 1923.
3	F	
4	S	
5	Sun	
6	M	Publication of results of the Examination for the Diploma in Geography.
7	Tu	
8	W	
9	Th	
10	F	
11	S	
12	Sun	Publication of results of F.L. and B.L. Examinations. Last day for receiving attendance certificates for B. V. Sc. Preliminary and Intermediate Examinations.
13	M	
14	Tu	Last day for receipt of applications for admission to Diploma classes in Indian Economics, Geography, Modern European Languages (French and German) and Indian Music.
15	W	
16	Th	Holiday.
17	F	
18	S	
19	Sun	
20	M	Last day for receiving attendance certificates for Certificate in Librarianship Examination. B.V.Sc., Preliminary and Intermediate Examinations.
21	Tu	
22	W	
23	Th	
24	F	
25	S	
26	Sun	
27	M	
28	Tu	
29	W	
30	Th	

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

JULY

1	F	Half-yearly closing of Bank Accounts—(Holiday.) Last day for receiving attendance certificates for the Examinations for Diploma in French and German. Last day for receipt of applications for Research Studentships.
2	S	Certificate in Librarianship Examination.
3	Sun	
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	
10	Sat.	
11	M	Diploma in French Examination. Last day for receiving attendance certificates for B. S. Sc. Part II Examination.
12	Tu	Diploma in German Examination.
13	W	
14	Th	
15	F	Last day of registration for September Intermediate, B.A., B.A. (Hons.) Preliminary, B.Sc., B.Sc. (Hons.) Part I, B.Sc. (Hons.) Part II (Subsidiary), L.T., F.L., B.L. and D.G.O. Examinations. Last day for receiving attendance certificates for D.G.O. Examination.
16	S	
17	Sun	
18	M	University of Bombay, Incorporated, 1857. M.J.L. and B.S.Sc. Part II Examinations. Publication of results of Examn. for Certificate in Lib- rarianship & B.V. Sc Preliminary & Inter. Examns.
19	Tu	
20	W	
21	Th	
22	F	University of Mysore, Incorporated, 1916.
23	S	Holiday.
24	Sun	
25	M	
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	Sun	

Late applications for Examinations with an additional fee of Re. 1
will be accepted within five days after the prescribed date.

AUGUST

1	M	Last day for receipt of reports from Colleges of the subjects and courses in which classes had not been opened for want of students.
2	Tu	
3	W	
4	Th	
5	F	
6	S	Last date for the submission of the Return of Staff as on 1st August 1938.
7	Sat	
8	M	Publication of results of B.S.Sc. (Part II), Diploma in French and German Examinations.
9	Tu	
10	W	
11	Th	<i>Avani Avittam</i> (Holiday).
12	F	
13	S	
14	Sat	
15	M	
16	Tu	
17	W	
18	Th	
19	F	Last day for receiving attendance certificates for Intermediate, B.A, B.A. (Hons.) Preliminary, B.Sc., B.Sc. (Hons.) Part I and Part II (Subsidiary) and L.T. Examinations.
20	S	<i>Sri Jayanti</i> (Holiday).
21	Sun	
22	M	
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	Sun	<i>Vinayaka Chathurthi</i> (Holiday).
29	M	
30	Tu	
31	W	

SEPTEMBER

1	Th	Last day for receiving applications for pass certificates of Inter. Examination of March 1938.
2	F	
3	S	
4	Sun	
5	M	University of Madras, Incorporated, 1857. Publication of the results of M.L. Examination.
6	Tu	
7	W	<i>Onam</i> (Holiday).
8	Th	The Indian Universities Act, 1904, came into force in the University of Madras, 1904.
9	F	
10	S	
11	Sat	
12	M	Intermediate, B.A. Part I, B. A. (Hons.) Prelim., B.Sc. (Part I). and B.Sc. (Hons.) Part I, Examinations. Last day for receiving attendance certificates for F.L. and B.L. Examinations.
13	Tu	
14	W	B.A. (Part II) Examination.
15	Th	B.A. (Part III). B.Sc. (Part II) and L.T. Examinations.
16	F	
17	S	B. Sc. (Hons.) Part II Subsidiary Examn. (Holiday).
18	Sun	
19	M	
20	Tu	
21	W	
22	Th	
23	F	<i>Mahalaya Amavasai</i> (Holiday).
24	S	
25	Sun	
26	M	F. L. and B. L. Examinations.
27	Tu	
28	W	
29	Th	St. Michaelmas Day.
30	F	Last day for receipt of applications for exemptions from <i>Bona-fide</i> trained teachers to appear for Matric. Inter. and B.A. Examinations and from other Private candidates for Matric. and O. T. Examinations March 1939.

OCTOBER

1	S	University of Patna, Incorporated, 1917. Last day of registration for the B.V. Sc. Preliminary and Intermediate Examinations.
2	Sun	
3	M	<i>Ayudha Puja</i> (Holiday).
4	Tu	
5	W	
6	Th	
7	F	
8	S	Last day of registration for Pre-Registration, First, Second and Final M. B. & B. S. Examinations.
9	Sun	
10	M	D. G. O. Examination.
11	Tu	
12	W	
13	Th	
14	F	University of Punjab, Incorporated, 1882.
15	S	Last day of registration for B. S. Sc. Part II Examination.
16	Sun	
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	<i>Deepavali</i> (Holiday).
23	Sun	
24	M	Publication of results of Inter., B.A., B.A. (Hons.) Prely., B. Sc., B. Sc. (Hons.) Part I and Part II (Subsidiary) and L.T. Examinations.
25	Tu	
26	W	
27	Th	
28	F	
29	S	The Madras University Amendment Act of 1929 came into force.
30	Sun	
31	M	Last day for receipt of applications and theses for M.Litt., M.Sc., Ph.D., D.Litt., D.Sc. and M.O.L. Examinations. Last day for receipt of applications from Institutions for recognition, affiliation or approval in any University courses from the following Academic year.

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

NOVEMBER

1	Tu	Last day of registration for M.A. in Research Examination.
2	W	
3	Th	
4	F	
5	S	
6	Mon	
7	M	Publication of results of D.G.O. Examination.
8	Tu	
9	W	
10	Th	
11	F	
12	S	
13	Mon	
14	M	Last day for receiving attendance certificates for B.V.Sc. Preliminary and Intermediate Examinations. Publication of results of F.L. and B.L. Examinations.
15	Tu	Last day of registration for O T. Examinations.
16	W	University of Allahabad, Incorporated, 1887.
17	Th	
18	F	
19	S	Last day for receiving attendance certificates for First, Second and Final M. B. & B. S. Examinations. (Holiday).
20	Sun	
21	M	Last day for receiving attendance certificates for B. S. Sc. (Part II) Examination.
22	Tu	
23	W	
24	Th	Ramzan. (Holiday).
25	F	
26	S	
27	Sun	
28	M	First, Second, and Final M. B. & B. S., B. S. Sc. Part II and B.V.Sc. Preliminary and Intermediate Examinations.
29	Tu	
30	W	

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

DECEMBER

1	Th	Last day of registration for B. S. Sc. (Part I), B. V. Sc. Final and LL.D., Examinations. Publication in the <i>Gazette of India</i> in 1904, of the Chancellor's Declaration that the Body Corporate of the University of Madras had been constituted in accordance with the provisions of the Indian Universities Act, 1904. University of Rangoon and Muslim University, Aligarh, Incorporated, 1920.		
2	F	Last day for receiving attendance certificates for Pre-Registration Examination.		
3	S			
4	Sun			
5	M			
6	Tu			
7	W			
8	Th			
9	F			
10	S	Pre-Registration Examination.		
11	Sun			
12	M			
13	Tu			
14	W	King George VI Born 1895.		
15	Th	Last day of registration for Matriculation, B.Sc. Part II, B.A. (Hons.) Final, M. A., B.Sc. (Hons.) Part II Examinations. University of Lucknow, Incorporated, 1920.		
16	F			
17	S			
18	Sun			
19	M	Publication of the results of B.V.Sc. Preliminary and Intermediate Examinations.		
20	Tu	Publication of results of First, Second, Final M. B. & B.S. and B.S.Sc. Part II Examinations.		
21	W			
22	Th			
23	F			
24	S	<i>Christmas Vacation</i> (Holiday).		
25	Sun	Do.	do.	Christmas day.
26	M	Do.	do.	
27	Tu	Do.	do.	
28	W	Do.	do.	
29	Th	Do.	do.	
30	F	Do.	do.	
31	S	Do.	do.	

Late applications for Examinations with an additional fee of Re. 1 will be accepted within five days after the prescribed date.

CHAPTER XXX

Register of Matriculates*Ordinances under 19 (p), and 31 (a) of the Act***Maintenance of
Register of Matriculates-
Enrolment**

1. The Syndicate shall maintain a Register of Matriculates in which the names of the following classes of persons shall be registered :—

- (a) Candidates who pass the Matriculation Examination of this University.
- (b) Holders of completed Secondary School Leaving or European School Leaving Certificates declared eligible, and holders of other Certificates accepted by the Syndicate as qualifying, for admission to this University and candidates who have passed an examination accepted by the Syndicate as equivalent to the Matriculation Examination of this University, when admitted to a University course of study.
- (c) Holders of any degree, title, diploma, or certificate, other than those specified in (a) or (b), on first admission to a University course of study.
- (d) Persons, other than those specified in (a), (b) or (c), who with or without exemption from attendance certificates are permitted to appear for the first time for any examination of this University other than the Matriculation Examination.
- (e) Persons other than those specified in (a), (b), (c) or (d), who are candidates for admission to a Research Degree of this University.

2. The Register of Matriculates maintained under the preceding Ordinance shall set forth, in respect of each Matriculate, the name in full, the name of father or guardian, age, religion, vernacular, school where educated,

number and date of School-leaving certificate or European School-leaving certificate, Government issuing certificate, accepted examination, date of passing and number of certificate, authority issuing certificate, institution entered, date of admission, and University examination for which he has been permitted to appear, or Research Degree for which he is a candidate.

CHAPTER XXXI.

Admission of Holders of S.S.L.C. and E.S.L.C. to University Courses of Study.

Ordinances framed under section 19 (p) of the Act.

Secondary School Leaving Certificates.

* † 1. Holders of Completed Secondary School-Leaving Certificates may be admitted to University Courses of Study if they (a) shall have completed fifteen years of age on or before the first day of the examination qualifying for the certificate, unless specially exempted from the operation of this rule, and (b) shall have secured at the Public Examination the marks prescribed below, and been declared eligible for admission by the Syndicate.

- (i) In the case of Certificates issued under the authority of the Government of Madras.

In Group A not less than 40 marks in English and not less than 35 marks in the selected Second Language (except in the case of pupils who are exempted by the Director of

* For the admission in the year 1937-38, the existing Ordinance is in force.

† *Note.*—This Ordinance has been revised to read as follows and will take effect from the beginning of the academic year 1938-39:—

- (1) Holders of Completed Secondary School Leaving Certificates may be admitted to University courses of study if they (a) shall have completed fifteen years of age on or before the first day of July of the year in which they are admitted to a College, and (b) shall have secured at the Public Examination the marks prescribed below, and been declared eligible for admission by the Syndicate

Public Instruction from the study of the Second Language), and 130 marks in the following four subjects taken together: (1) Elementary Mathematics, (2) Elementary Science, (3) Outlines of History of England and India and Geography, and (4) one of the following subjects of Group C, *viz.*, Algebra and Geometry, Physics, Chemistry, Botany, Physiology, Geography, History of England and India, a Third Language, Indian Music, Book-keeping, Commercial Practice, Domestic Science, Agriculture, House-keeping and Nursing, Needlework, Dress-making and Embroidery, Lace-work, and Crochet, and Precis-writing and Indexing; the marks being not less than 35 per cent. in each of any two of these four subjects and not less than 25 per cent. in each of the other two:

Provided that a certificate holder who secures in the aggregate not less than 210 marks in the six subjects, or not less than 175 marks if he has been exempted from the study of Second Language under Group A, but fails in not more than two subjects by a deficiency of not more than one mark in each subject, shall be declared eligible for admission to University Courses of Study.

There shall be a Moderation Board appointed by the Syndicate to consider hard cases.

- (ii) In the case of certificates issued under the authority of His Exalted Highness the Nizam of Hyderabad, eligibility shall be determined by the application of the above rules to the subjects included in the scheme of the examination with the approval of the Syndicate.
- (iii) In the case of certificates issued under the authority of the Travancore Government, eligibility shall be determined by the following rule:—

Not less than 40 marks in English, not less than 35 marks in the Second Language, not

less than 35 marks in any two and not less than 25 marks in the remaining of the following subjects—Elementary Mathematics, Elementary Science and History and Geography—provided that a certificate holder who secures in the aggregate not less than 175 marks in the five subjects, or not less than 140 marks, if he has been exempted from the study of the Second Language, but fails in not more than two subjects by a deficiency of not more than one mark in each subject, shall be declared eligible for admission to University courses of study.

- *(iv) In the case of certificates issued under the authority of the Cochin Government, eligibility shall be determined by the following rule:—

The candidate should get at least 40% in English, 35% in the Second Language, 35% each in any two and not less than 25% in the third of the following subjects, and not less than 35% of the total:—

- (1) Elementary Mathematics,
- (2) and (3) Two subjects under Group C, one of which shall be from the following list:—

Mathematics,
Physics,
Chemistry,
Botany,
Physiology,
Geography,
History of England,
History of India,
A Third Language,
Deductive Logic,
Indian Music,
European Music and
Book-keeping.

*Note.—The above rules of eligibility will be applied in the case of candidates appearing for the S.S.L.C. Public Examination in Cochin from March 1938 *et seq.*)

A certificate-holders who secures in the aggregate not less than 175 marks in the five subjects or not less than 140 marks, if he has been exempted from the study of the Second Language, but fails in not more than two subjects by a deficiency of not more than one mark in each subject, shall be declared eligible for admission to University courses of study.

- (v) There shall be a Moderation Board appointed by the Syndicate to consider hard cases from those who are included in (ii), (iii) and (iv) *supra*.

(2) A candidate for admission to University Courses of Study who in any year fails to qualify by reason of deficiency in any subject or subjects in which he has undergone examination shall be required to appear again at the Public Examination in all the six (or five) subjects, and his eligibility shall be determined by the marks obtained by him at his last appearance.

(3) No holder of a certificate declared ineligible on a scrutiny shall be declared eligible on a rescrutiny according to Ordinances prescribed after the first scrutiny.

(4) A complete list of certificate holders declared eligible for admission to University Courses of Study shall be published in the *Fort St. George Gazette*, and a copy of the list shall be furnished to each Principal of a Constituent or Affiliated College.

European School Leaving Certificate.

2. (1) Holders of completed Madras European School Leaving Certificates or the Bangalore European High School Certificates shall be declared eligible for admission to University courses of study if they have secured a

“pass” at the European School Leaving Certificate Examination, Madras, or the European High School Examination, Bangalore, respectively.

*Such persons shall have completed the age of fifteen years on or before the first day of July of the year in which they are admitted to a University course of study.

(2) A candidate for admission to University courses of study, who in any year fails to qualify for admission by reason of deficiency in any subject or subjects in which he has undergone examination, shall be required to appear again at the Public Examination in all subjects and secure a pass.

(3) A complete list of certificate holders declared eligible for admission to University courses of study shall be published in the *Fort St. George Gazette* and a copy of the list shall be furnished to each Principal of a Constituent or Affiliated College.

CHAPTER XXXII.

Admission to Courses of Study.

Ordinances under Section 19 (p) and 31 (a) of the Act.

1. No person shall be permitted to enter upon a University course of study for the first time unless he gets his name registered in the Register of Matriculates maintained by the Syndicate. Every applicant for registration shall pay to the University such registration fee as may be prescribed.

*Such persons shall have completed the age of fifteen years on or before the first day of July of the year in which they are admitted to a University course of study.

* Note.—This addition to the Ordinance regarding age limit takes effect from the academic year 1938-39.

2. Admission to the course of study for the Intermediate Examination shall be granted only to the following classes of students:—

Conditions of admission to the Intermediate course

- (i) Persons who have passed the Matriculation Examination of this University.
- (ii) Holders of completed Secondary School Leaving Certificates and of completed European School Leaving Certificates issued under the authority of the Government of Madras or of the Indian States of Travancore, Cochin and Hyderabad, declared eligible for admission to a University course of study according to the rules and directions which the Syndicate may prescribe from time to time.
- (iii) Holders of completed Secondary School Leaving Certificates and of European School Leaving Certificates, issued by such other authority as may be accepted by the Syndicate, who have passed the examinations qualifying for the certificates or who have been declared eligible by such authority for admission to a University course of study in the Province or State which issues the certificates, provided their certificates comply with such rules of eligibility as may be laid down by the Syndicate of this University.
- (iv) Holders of Cambridge and Oxford School certificates who are eligible for admission to their respective Universities, and whose certificates satisfy the conditions laid down by the Syndicate from time to time.
- (v) Persons who have passed the Matriculation Examination of any other Indian University or any other public examination, *accepted by the Syndicate as equivalent* to the Matriculation Examination of this University for admission to a University course of study.

**Conditions of
admission to the
Courses for Oriental
Titles**

3. The conditions under which students may be admitted to the courses for Oriental Titles shall be as follows:—

Siromani & Vidvan.—

No person shall be admitted to the courses of study for the Siromani and Vidvan Examinations with Sanskrit as one of the two languages, unless he has passed the admission test conducted by the Educational Department of the Government of Madras, and obtained from the department a certificate of fitness for the course he proposes to take up.

In the case of candidates for the Vidvan Title selecting Tamil alone, or a Dravidian Language, Marathi or Oriya or Hindi as the main language, the admission test shall consist of the two papers set for the Intermediate Examination in Arts and Science in the corresponding Indian language, provided that a few questions on Grammar shall be added in that part of the Intermediate (Part II) First paper intended for Vidvan candidates alone, and that the question on translation in the three hours paper for the Intermediate Examination shall, for the admission test, be replaced by questions on paraphrase or Composition in the selected language. Candidates obtaining not less than 40 per cent. of the total number of marks in the two papers taken together shall be certified as eligible for admission to the respective Vidvan courses. A candidate who has passed in Part II of the Intermediate Examination in Arts and Science thereof, shall, without any further admission test, be admitted to the Vidvan course, provided that the language selected as the main or as the only language for the course is identical with the language in which he passed Part II of the Intermediate Examination.

Afzal-ul-Ulama & Munshi-i-Fazil.—

No person shall be admitted to the courses of study prescribed for the titles of Afzal-ul-Ulama and Munshi-i-Fazil, unless he produces a certificate of fitness from the head of the approved Oriental College which he proposes to enter.

* *Vide* also Regulation 12 of Chapter LXI, *infra*.

It shall be competent for the Syndicate to recognize the admission tests of other Universities or examinations conducted by Indian States as qualifying for admission to the Vidvan and Siromani Courses of this University.

4. For the purpose of admission to courses of study in this University, the Syndicate shall have the power to recognize Intermediate Examinations of other Indian Universities and of duly constituted Boards of Secondary and Intermediate Education, and Degree Examinations of other Indian Universities, as equivalent to the corresponding examinations of this University, subject to the following conditions:—

**Recognition of
Examinations of
other Universities
and Bodies**

- (1) That the normal length of the course prescribed leading to the examination sought to be recognized shall not be less than that for the corresponding examination of this University;
- (2) that the course of study for the examination sought to be recognized shall have been pursued in a university or in a college recognized by a university; and
- (3) that in the case of admission to a professional course the examination sought to be recognized shall have been taken in those subjects which are prescribed by this University for the examination qualifying for admission to the course; provided that it shall be competent for the Syndicate to dispense with a strict compliance with this condition.

5. For the purpose of admission to courses of study in this University, examinations conducted by Bodies other than those mentioned in the above Ordinance may, in individual cases and on their merits, be recognized by the Syndicate as equivalent to the corresponding examinations of this University.

CHAPTER XXXIII.

Conduct of Examinations.

Ordinances under Section 31 (h) of the Act.

1. (a) All examinations shall be held in Madras and in such other places as may be fixed by the Syndicate. A list of the centres at which examinations will be held shall ordinarily be published annually in the Gazette in the preceding April.

Place of Examinations

(b) When there are more centres than one for a written examination question papers shall be given out to candidates on the same day and at the same hour in every centre.

2. Gazetted holidays shall be considered *dies non* for the purposes of the University Examinations, but the Syndicate may, for special reasons, decide to hold examinations on such holidays.

Gazetted holidays

3. The following Examinations shall be held twice in the academical year:—

1. Intermediate.
2. B.A. Degree.
3. B.A. (Honours) Preliminary.
4. B.Sc. Degree.
5. B.Sc. (Honours)—Part I and Part II—Subsidiary Subjects only.
6. L.T.
7. Law—F.L. and B.L.
8. Pre-Registration Examination (Medical).
9. M.B. & B.S. Examinations.
10. B.S.Sc.—Parts I and II.
11. D. G. O.

Examinations held twice in a year.

The other examinations shall be held once a year.

4. The papers set in any subject shall be such as a candidate of decided ability well prepared in the subject can reasonably be expected to answer within the time allotted.

Standard of Question papers

5. No question shall be put at any University examination calling for a declaration of religious belief, or profession or political views on the part of the candidate, and no answer given by any candidate shall be objected to on the ground of its giving expression to any particular form of religious belief, profession or political views.

Nature of Questions

6. All examinations, except practical and *viva voce* examinations, shall be conducted by means of printed, typed or written papers to be set and answered, except in the case of Indian languages, and languages for the Oriental Titles Examinations in English unless otherwise stated therein.

Conduct of Examinations

7. Examination Boards shall, whenever there are candidates, be appointed annually by the Syndicate for the following subjects or groups of subjects—

Examination Boards

- | | |
|--------------------------------|------------------------------------|
| i. English. | xx. Botany. |
| ii. Greek and Latin. | xxi. Zoology including Physio- |
| iii. French. | xxii. Geology. [logy. |
| iv. German. | xxiii. Anthropology. |
| v. Sanskrit. | xxiv. Philosophy. |
| vi. Marathi. | xxv. History and Politics. |
| vii. Hindi. | xxvi. Economics. |
| viii. Oriya. | xxvii. Geography. |
| ix. Burmese. | xxviii. Teaching. |
| x. Sinhalese. | xxix. Law. |
| xi. Hebrew ; Syriac. | xxx. Medicine. |
| xii. Arabic, Persian and Urdu. | xxxi. Sanitary Science. |
| xiii. Tamil. | xxxii. Engineering. |
| xiv. Telugu. | xxxiii. Agriculture. |
| xv. Kannada. | xxxiv. Veterinary Science. |
| xvi. Malayalam. | xxxv. Commerce. |
| xvii. Mathematics. | xxxvi. Indian Music. |
| xviii. Physics. | xxxvii. Western Music. |
| xix. Chemistry. | xxxviii. Drawing and Architecture. |

The Syndicate may appoint separate Boards of Question-Paper Setters and Boards to conduct examinations, as it deems fit. Joint or separate Boards may be appointed to conduct different examinations.

Chairmen of Boards and their duties. 8. The Syndicate shall appoint a Chairman for each Board, who shall at the conclusion of every examination forward to the Syndicate a report on the manner in which the examination has been conducted.

Special Boards. 9. The Syndicate may appoint special Boards of Examiners to supervise the Matriculation Examination and the Intermediate Examination in Arts and Science.

Boards report to the Syndicate 10. The Examination Boards shall report to the Syndicate the results of all examinations conducted or supervised by them.

Approval and Publication of Results 11. The Syndicate shall have power to approve and publish the results.

Manner of publication of results of successful candidates 12. In the Examinations for Degrees in Law, Medicine, Engineering, Agriculture and Commerce and for the final part of the Degrees of the B.A. (Honours) and B.Sc. (Honours), the names of all successful candidates shall be published in the order of proficiency. In the case of the other Examinations, the names of candidates who are placed in the First Class shall be published in the order of proficiency; in the case of the B.A. and B.Sc. Degree Examinations, the names of candidates who are placed in the Second Class shall also be published in the order of proficiency. The names of other successful candidates shall be published in the order in which they were registered for the examination.

Pass Certificates 13. A certificate signed by the Registrar shall be given to each successful candidate at an examination other than an examination for a degree, title or diploma. The certificate shall set forth the date of the examination, the

subject in which the candidate was examined, the class in which he was placed, and the subjects, if any, in which he gained distinction in accordance with the Regulations.

14. A Diploma under the seal of the University and signed by the Vice-Chancellor shall be presented at a Convocation to each successful candidate at an examination for a degree, title or diploma. The diploma shall set forth the date of the examination, the subjects in which the candidate was examined, the class in which he was placed, and the subjects, if any, in which he gained distinction in accordance with the Regulations.

CHAPTER XXXIV.

Fees.

Statute
Examination Fees 1. Candidates for examinations.
Diplomas and Degrees shall pay the following fees:—

	Rs.
(a) <i>Examination Fees</i> .—	
Matriculation Examination ..	15
Intermediate Examination—	
Whole Examination ..	25
Part I only ..	10
Part II only ..	8
Part III only ..	18
B. A. Degree Examination—	
First appearance—	
• Whole Examination or any part or parts ..	48
Subsequent appearance—	
Whole Examination ..	48
Part I ..	20
Part II ..	10
Part III ..	24

	Rs.
B.A. (Honours) Degree Examination—	
Preliminary	.. 15
Final	.. 60
Science Branches—(Physical or Natural Science).	
Subsidiary subject	.. 30
Main subject	.. 30
M.A. Degree Examination	.. 60
Degree of Master of Letters (M.Litt.)	.. 100
Degree of Doctor of Letters (D.Litt.)	.. 200
B.Sc. Degree Examination—	
Part I	.. 15
Part II	.. 36
B.Sc. (Honours) Degree Examination—	
Part I	.. 15
Part II—	
Science Subjects. (Physics, Chemistry, or any Natural Science subject).	
Subsidiary subject or subjects	.. 30
Main subject	.. 30
Any other Branch (i.e. Mathematics)	.. 60
Degree of Master of Science (M.Sc.)	.. 100
Degree of Doctor of Science (D.Sc.)	.. 200
B.Sc. (Ag.) Degree Examination—	
First Examination	.. 20
Second Examination	.. 30
Final Examination	.. 30
One subject only for any Examination	.. 15
B.V.Sc. Degree Examination:—	
Preliminary Examination	.. 20
Intermediate Examination	.. 30
Final Examination	.. 40
One subject only for any Examination	.. 15
L.T. Degree Examination	.. 20

	Rs.
B.L. Degree Examination—	
F.L. Examination ..	40
For each division ..	25
B.L. Degree Examination ..	50
<i>For each division—</i>	
(i) Hindu and Muhammadan Law ..	20
(ii) Property and Land Tenures ..	25
(iii) Criminal Law and Evidence ..	25
M.L. Degree Examination ..	100
L.L.D. Degree ..	200
Pre-Registration Examination (for M.B., B.S. Degree Course)—	
First appearance—either whole or in Part ..	30
*Subsequent appearance—Each subject ..	15
M.B. & B.S. Degree Examination—	
First M.B. & B.S. Examination—	
Whole Examination ..	45
Part I only ..	15
Part II only ..	35
Separate subjects after first appearance—	
Organic Chemistry ..	15
Anatomy or Physiology ..	20
Second M.B. & B.S. Examination—	
Whole Examination ..	60
Part I only ..	20
Part II only ..	50
Separate subjects after first appearance—	
Pharmacology (Part I) ..	20

	Rs.
Ophthalmology (in Part II)	.. 15
Hygiene or General Pathology with Bacteriology (Part II)	.. 20
Final M.B. & B.S. Degree Examination—	
First appearance—	
Whole Examination	.. 60
Part I only—Forensic Medicine	.. 15
Part II only	.. 50
Subsequent appearance—	
Medicine or Surgery	.. 20
Obstetrics and Gynaecology	.. 15
M.D. or M.S. Degree Examination	.. 150
Diploma in Midwifery (D. G. O.)	. 50
B.S.Sc. Degree Examination—	
Part I	.. 50
Part II	.. 75
B.E. Degree Examination—	
F.E. Examination	.. 30
B.E. Degree Examination	.. 50
Oriental Titles Examination—	
Entrance test to Vidvan course (Dravidian Main)	.. 3
Preliminary Examination	.. 12
Final Examination	.. 12
Certificates of Proficiency Examination	.. 10
Degree of Bachelor of Oriental Learning Examination—	
Whole Examination	.. 48
Part I	.. 20

	Rs.
Part II	.. 10
Part III (Whole Part)	.. 20
Selected Subject I	.. 10
Selected Subject II	.. 10
Degree of Master of Oriental Learning	.. 50
Examination for the Diploma in Economics	.. 30
Examination for the Diploma in Modern European Languages (French or German)	.. 12
Examination for the Diploma in Geography	.. 30
Subsequent appearance—Dissertation only	.. 15
Examination for the Diploma in Indian Music	.. 24
Examination for the Certificate in Librarianship.	5

(b) *Degree or Diploma Fee.*—

Diploma fee (for taking Degree at a Convocation in person)	.. 3
Degree <i>in absentia</i> fee (including Diploma fee)	.. 13
M.A. Degree fee	.. 25

provided that the above fees shall not be levied in the case of Honorary Degrees.

Statute
Fees from Research Students and Fellows permitted to work in the Depts. of the University.

2. Research Students and Fellows (stipendiary and non-stipendiary) permitted to study in the Departments of the University or under any Teacher of the University shall pay the following fees:—

Persons working in Arts Departments—either
Rs. 30 per annum or Rs. 10 per term (thrice in a year).

Persons working in Science Departments—either
Rs. 45 per annum or Rs. 15 per term (thrice in a year).

Statute Recognition or Affiliation fee. 3. Colleges applying for recognition or affiliation shall pay the following fees—

First recognition or affiliation. At the rate of Rs. 150 for each member of the Inspection Commission appointed.

Further recognition or affiliation. At the rate of Rs. 100 for each member of the Inspection Commission appointed.

Statute Registration of Graduates fee. 4. Graduates applying for Registration in the List of Registered Graduates shall pay a fee of Rs. 5.

(Ordinance).

Ordinance Fees for Matriculation and Diploma Courses.

5. *Other Fees*—

	Rs.
I. (1) For registration as a Matriculate ..	2
(2) For undergoing the Diploma Course in Economics (two years course) ..	37½
	per year.
(3) For undergoing the Diploma Course in Economics (one year course) ..	75
(4) For undergoing the course of lectures in one or more subjects for the Diploma Course in Economics (for each subject).	15
(5) For undergoing the Diploma Course in German (one year course) ..	45

provided, however, it shall be competent for the Syndicate to admit certain classes of applicants under the conditions enumerated in the proviso to Regulation 19 of Chapter LXII, at a concession rate of Rs. 30 per candidate.

(6) For undergoing the Diploma Course in French (one year course) ..	45
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provided, however, it shall be competent for the Syndicate to admit certain classes of applicants under the conditions

	Rs.
enumerated in the proviso to Regulation 19 of Chapter LXII, at a concession rate of Rs. 30 per candidate.	
(7) For undergoing the Certificate Course in Librarianship (about three months) ..	20
(8) For undergoing the Diploma course in Geography (one year course) ..	75
(9) For undergoing the Diploma course in Indian Music (two years course) ..	60 or 30 per year.
(10) For undergoing the Diploma Course in Politics and Public Administration (two years course Rs. 75) ..	37½ per year.
II (1) For considering appli-	
Ordinance Other fees for getting marks, certificates, etc.	cation for exemption from the production of attendance certifi- cates ..
	5
(2) For considering application for recogni- tion of an examination of another University or examination conducted by other Bodies outside the jurisdiction of the University ..	5
(3) For scrutiny of Secondary School- Leaving Certificates of candidates who sat for the examination prior to 1916 and from those who sat for the examination within the Madras Presidency and out- side the University area ..	3
(4) For scrutiny of Madras European School Leaving Certificates of candidates who sat for the examination prior to 1927, and of those who sat for the examination outside the University area after 1927..	3

	Rs.
(5) For scrutiny of Bangalore European High School Certificates of candidates who sat for the Examination prior to 1932 ..	3
(6) For considering application for recognition of change of name ..	10
(7) For obtaining a duplicate Diploma or Certificate ..	5
(8) For obtaining a Provisional Certificate.	2
“(9) For application for Intermediate Certificate received by the Registrar after the prescribed date ..	3
(10) For obtaining a Migration Certificate ..	2
(11) For issue of a certified extract from the Registers or Records of the University ..	1
(12) (a) For supplying marks to a candidate obtained at any Examination other than B.A. Degree Examination ..	2
(b) For supplying marks to a candidate obtained at the B.A. Degree Examination for each Part ..	2
(c) For supplying marks to a candidate obtained at the Intermediate Examination for each Part passed separately ..	2
(d) For supplying detailed marks to a candidate obtained at Examinations—for the details of each subject comprising a minimum (additional fee) ..	1
(13) For checking the addition of the marks in each paper of a candidate for any University Examination (for each paper) ..	5

* Dates will be notified each year in the Fort St. George Gazette when publishing the results.

Rs.

- (14) (a) For supplying to Principals of Colleges marks of all the successful candidates at the Matriculation and Intermediate Examinations (for each examination of the year) .. 20
- (b) For supplying to Principals of Colleges marks of all the candidates (passed and failed) from a particular College for the B.A., B.Sc., B.A. (Hons.), B.Sc. (Hons.), F.L., B.L., M.B. & B.S., L.T., F.E., B.E., B.Sc. Ag., or any other examination, for fifty candidates or less. } Annas 8 per candidate subject to a maximum fee of Rs. 10 for an examination, for fifty candidates or less.
- (c) For supplying to Principals of Colleges detailed marks in each subject comprising a minimum (for each candidate)

CHAPTER XXXV.

Dates for Payment of Examination Fees and Submission of Certificates, Dates of Commencement of Examinations, and Dates of Publication of Results of Examinations.

The latest dates on which fee for examinations shall be payable, and applications for admission thereto and certificates to be produced by candidates are to be submitted to the Registrar in the forms prescribed, the dates on which examinations shall begin, and the dates on which the results of the examinations shall be published at the Senate House shall be:—

Ordinance

Dates of Examinations, and dates of submission of applications and attendance certificates, and dates of publication of results.

Examinations.	Last date for payment of fees and for sub- mitting applica- tions.	Last day for submitting certificates.
Arts and Science—		
Matriculation... ...	December 15 ...	March 16 ...
Intermediate ... {	January 10 ... or July 15 ...	March 9 ... or August 19 ...
B.A. Part I ... {	January 10 ... or July 15 ...	March 9 ... or August 19 ...
Part II 	Do. ...	Do. ... } . .
Part III 	Do. ...	Do. ... } .
B.A. (Hons.) Preliminary {	January 10 ... or July 15 ...	March 9 ... or August 19 ...
B.A. (Hons.) Final ...	December 15 ...	March 9 ...
M.A. 	Do. ...	Do. ...
B. Sc.—		
Part I ... {	January 10 ... or July 15 ...	March 9 ... or August 19 ...
Part II ... {	December 15 ... or July 15 ...	Do. ... } . .
B.Sc. (Hons) —		
Part I ... {	January 10 ... or July 15 ...	March 9 ... or August 19 ...
Part II (Main) ...	December 15 ...	March 9 ...

Date of commencement of examinations.	Date of publication of results.
4th Monday in March.	3rd Monday in May.
4th Monday in March, or 2nd Monday in September.	3rd Monday in May, or 4th Monday in October.
4th Monday in March, or 2nd Monday in September.	4th Monday in May, or 4th Monday in October
Friday following the 4th Monday in March, or Wednesday following the 2nd Monday in September.	} Do.
Monday following the 4th Monday in March, or Thursday following the 2nd Monday in September.	} Do.
4th Monday in March, or 2nd Monday in September.	4th Monday in May, or 4th Monday in October.
4th Monday in March. Do.	2nd Monday in May. Do.
4th Monday in March, or 2nd Monday in September.	4th Monday in May, or 4th Monday in October.
Monday following the 4th Monday in March, or Thursday following the 2nd Monday in September.	} Do.
4th Monday in March, or 2nd Monday in September.	4th Monday in May, or 4th Monday in October.
4th Monday in March.	3rd Monday in May.

Examinations.	Last date for payment of fees and for sub- mitting applica- tions.		Last day for submitting certificates.	
B.Sc. (Hons.)—				
Part II (Subsidiary)...	{	December 15 ... or July 15 ...	March 9 ... or August 19 ...	...
M. Sc. or M. Litt. ...	{	March 31 ... or October 31 ... March 31 ...	... ... ...
D. Litt or D. Sc. ...	{	or October 31 ... January 15 ...	... ... ...
Law— F.L. and B.L.	{	or July 15 ...	1st Monday in April, or 2nd Monday in Sept.	
M. L.	January 15 ...	...
LL.D.	December 1 ...	...
Medicine— Pre-Registration Examination.	{	October 8 ... or January 15 ...	} Eight days before the date of Exa- mination.	
M.B. & B.S.— First and Second Exa- minations.		Do.	Do.	
Final Examination	...	Do. ...	Do.	
M.D. or M.S.	...	January 15 ...	January 15 ...	
Diploma in Midwifery (D.G.O.)	{	January 15 ... or July 15 ...	January 15 ... or July 15 ...	
B.Sc.— Part I ...	{	December 1 ... or March 1 ...	} Monday of the week preceding the Examination.	
Part II ...	{	June 1 ... or October 15 ...		Do.
Engineering— F. E. and B. E.	...	January 15 ...	2nd Monday in March	

Date of commencement of examinations.	Date of publication of results.
Thursday following the Monday after the 4th Monday in March, or Saturday following the 2nd Monday in September.	4th Monday in May. or 4th Monday in October.
...	...
...	...
...	...
3rd Monday in April, or 4th Monday in September.	2nd Monday in June, or 2nd Monday in November.
3rd Monday in July	1st Monday in September.
...	...
.	
{ December 10, or 1st Monday in April	January 5, or 3rd Monday in April
{ 4th Monday in November, or 1st Monday in April	December 20, or 3rd Monday in April
{ 4th Monday in November, or 2nd Monday in April	December 20, or 1st Monday in May.
1st Monday in April.	1st Monday in May.
{ 2nd Monday in April, or 2nd Monday in October.	1st Monday in May, or 1st Monday in November.
{ 2nd Monday in January, or 2nd Monday in April.	4th Monday in January, or 4th Monday in April.
{ 3rd Monday in July, or 4th Monday in November.	2nd Monday in August, or December 20.
.	
4th Monday in March.	1st Monday in May.

Examinations.	Last date for payment of fees and for sub- mitting applica- tions.	Last date for submitting certificates.
Teaching— L. T. {	January 15 ... or July 15 ...	March 15 ... or August 19 ...
Agriculture— B.Sc. (Ag.)		
First Examination ...	January 15 ...	March 19 ...
Second Examination...	Do. ...	Do. ...
Final Examination ...	Do. ...	Do. ...
Veterinary Science— B. V. Sc.—		
Preliminary Examina- tion.	{ March 1 ... or October 1 ...	2nd Monday in June. or 2nd Monday in Nov...
Intermediate Examina- tion.	Do. ...	Do. ...
Final Examination. {	July 15 ... or December 1 ...	October 1 ... or 2nd Monday in January.
3. Com. Examinations— Preliminary ...	January 15 ...	1st Monday in April...
Final— ...	Do. ...	Do. ...
Oriental Titles— Entrance test to Vid- van course.	November 15 ...	...
Preliminary ...	Do. ...	March 9 ...
Final ...	Do. ...	Do. ...
Optional Division for Certificates of Pro- ficiency.	Do. ...	Do. ...
3. O. L.— Part I II III }	Do. ...	Do. ...
M.O.L. ...	{ March 31 or October 31 }	...
Fine Arts—		
Diploma in Indian Music	January 15 ...	1st Monday in April...
Diploma in Economics...	January 15 ...	March 19 ...
Diploma in French ...	March 15 ...	July 1 ...
Diploma in German ...	Do. ...	Do. ...
*Diploma in Geography.	January 15 ...	1st Monday in April.
Certificate Course in Librarianship.	June 1 ...	4th Monday in June.

*Last date for submission of thesis, May 15.

Date of commencement of examinations.	Date of publication of results.
April 1, or Thursday following the 2nd Monday in September.	4th Monday in May, or 4th Monday in October.
1st Monday in April. Do. 2nd Monday in April.	3rd Monday in May. Do. Do.
4th Monday in June or 4th Monday in November. . . Do.	3rd Monday in July, or 3rd Monday in December. Do.
2nd Monday in October. or 3rd Monday in January.	1st Monday in November, or 2nd Monday in February.
3rd Monday in April. Do.	1st Monday in June. Do.
Same day as Part II—Second Language—Intermediate Exami- nation, in March. 4th Monday in March. Immediately after the Preliminary Examination. Immediately after the Final Exa- mination.	4th Monday in May. Do. Do. Do.
4th Monday in March. Immediately after the O. T. Preli- minary Examination. Immediately after the O. T. Final Examination. 	Do. Do. Do.
2nd Monday in April 2nd Monday in April. 2nd Monday in July Tuesday following the 2nd Monday in July. 2nd Monday in April. Friday following the 4th Monday in June.	4th Monday in May. 4th Monday in May. 2nd Monday in August. Do. 1st Monday in June. 3rd Monday in July.

Provided that applications for admission to Examinations received within a period of five days after the dates specified above will be accepted on payment of a fee of Rupee one per candidate.

Provided also that in the case of the March-April Examinations,

- (1) If the fourth Monday in March falls in the week preceding Easter Day, the Matriculation, the Intermediate, B.A., B.Sc., B.A. (Honours) Preliminary, B.Sc. (Honours) Part I, B.A. (Honours) Final, M.A. and B.Sc. (Honours) Part II Examinations, the examinations in Engineering, and the Oriental Titles Examinations shall commence on the previous Monday.
- (2) Thursday, Friday and Saturday before Easter Day and Easter Monday and Easter Tuesday shall be *dies non*.
- (3) The dates for the commencement of (a) the examinations in Optional Groups and in each main and in each subsidiary subject of Optional Groups in Science subjects in the courses for the B.A. Degree, and courses for the B.Sc. (Pass) and (Honours) Degree, (b) the examinations in Group (v) of the B.A. Degree Examination and in Branch v of the B.A. (Honours) Degree Examination and (c) the examinations in Part I of B.Sc. (Pass) and (Honours) and of B.A. (Honours) Preliminary shall be those notified by the Syndicate in the preceding February.
- (4) The Syndicate shall so fix the dates of the Vidvan Preliminary and Final Examinations, and the other Degree Examinations, as to avoid, as far as may be practicable, the setting of duplicate sets of question papers in the same subject. The final dates for the examinations shall be published by the Syndicate in the Fort St. George Gazette in the preceding February.

· Provided also that it shall be competent for the Registrar to publish the results on any day previous to or succeeding the dates mentioned, if ordinarily at least three days' notice is given to the public of the change.

CHAPTER XXXVI (Regulations).

Transfer and Term or Annual Certificates.

Transfer Cer-
tificates. 1. No student who has previously studied in any recognized school or college shall be admitted to a college unless he presents a transfer certificate showing—

(a) the name of the student in full.

(b) the date of birth as entered in the admission register,

(c) the dates on which he was admitted to and on which he left the institution,

(d) the class in which he studied at the time of leaving it,

(e) the subjects or portions thereof studied by him while enrolled,

(f) if it be the time when annual promotions take place whether he is qualified for promotion to a higher class,

(g) that he has paid all fees or other moneys due to that institution in respect of the last term in which he was enrolled, and a certificate of Medical Inspection, if any, from the school in which he last studied.

No student shall be enrolled pending the production of such certificate. Every such certificate shall be endorsed with the admission number under which the student is enrolled and shall be filled for reference and inspection.

Certificates of
Medical Inspec-
tions 2. A student admitted to a College shall be required to undergo a Medical Inspection within the first term of the first year of the Intermediate Course and a re-inspection during the first term of the Junior B.A.

Course. A student proceeding from one College to another shall be required to produce, along with his Transfer Certificate, the Medical Certificate given in the previous College. Before admission to the B.A. Course the student shall be required to produce his Certificate of Medical Inspection given during the Intermediate Course.

Such medical inspection shall be conducted by a Doctor possessing the University Qualification of L.M. & S., or M.B. & B.S., or a registrable British Qualification.

In a case where a College has difficulty in arranging for Medical Inspection, a report should be made to the Syndicate by the College in question.

3. A student applying for a transfer certificate during a college term on any day of which he has been enrolled, or applying not later than the fifth working day of the college term immediately following, shall forthwith be given such certificate upon payment of all fees or other moneys due, or of such portion thereof as the Principal may see fit to demand, for the college term in which he was enrolled.

A student applying for such certificate after the fifth working day of the college term immediately following that during which he has been last enrolled shall forthwith be given it on payment of (1) all fees or other moneys due, or of such portion thereof as the Principal may see fit to demand, in respect of the college term in which he was last enrolled. and (2) an additional fee of Rs. 3 at the option of the Principal.

Provided that, when a student has been enrolled at favourable fee rates, he shall be liable for such rates only.

No student shall be considered to have been enrolled in any college term unless he has attended the college and received instruction for at least one day of that college term or has paid the fees or portions thereof prescribed.

In the case of a student who has been a candidate for a University Examination, the results of which have not been published before the beginning of the college term, the eleventh day after the results of that examination have

been announced at the Senate House* shall be counted for him the first working day of the college term so far as the grant of a transfer certificate is concerned.

In the event of a Principal refusing or delaying to give a transfer certificate to which a student may be entitled the student shall have right of appeal to the Syndicate.

4. If any student is expelled from a Constituent or an Affiliated College, intimation of the fact of expulsion, with a statement of the reasons therefor, shall be given forthwith by the Principal (a) to the parent or guardian of the student, (b) to the Syndicate; intimation to the Syndicate shall be accompanied by the transfer certificate of the student. The Syndicate, on the application of the student or his parent or guardian, may after making such enquiry as it deems proper deliver the certificate to the student with any necessary endorsement or withhold it temporarily or permanently.

5. The academic year for colleges affiliated or recognised in Arts, Science, Teaching and Law shall consist of three terms, which shall ordinarily begin and end as follows:—

•First term—June to September, closing with the Michaelmas holidays.

Second term—October to December, closing with the Christmas holidays.

Third term—January to April, closing with the Summer holidays.

6. A student shall ordinarily qualify for the annual certificate in one and the same college, but in special cases the Syndicate may allow attendance in different colleges to be combined for the purposes of the annual certificate.

*Or in the Building in which the Office of the Registrar, University of Madras is located.

7. A student in the Arts or Science Courses desirous of transfer from one college to another shall apply to the Syndicate for permission to combine attendances at the two colleges, for purposes of the annual certificate. Such applications shall be submitted in every case prior to making the desired transfer and shall furnish valid reasons for the change proposed. This rule applies to a transfer during a term as well as to a transfer at the end of an academic year when an additional term is proposed to be kept in a different college. An application to combine attendances shall invariably be accompanied by (i) the written consent to the proposed transfer of the Principal of the college in which the student is studying and (ii) the written promise of admission from the Principal of the college which he proposes to join, together with an assurance countersigned by the latter Principal that the student, if permitted by the Syndicate to combine attendances, will, in the main, be able to continue in his college the course of study already commenced by the student under each part of the examination.

In the case of a student in Arts or Science who has been permitted to combine attendances in two colleges, the annual certificates will be accepted as satisfying the Regulations, provided the student has kept either,

(a) three quarters of the possible attendances in each college before and after his transfer respectively,

or

(b) three quarters of the combined total of possible attendances in the two colleges taken together.

8. In colleges affiliated or recognised in Arts, Science, Teaching and Law, the grant of the annual certificate shall be in respect of three terms ordinarily consecutive comprising one year; but it shall be competent for the authorities of a college to grant such certificate in respect of three terms which are not consecutive, provided that the student has during those terms completed the necessary courses of study for the year.

**Conditions of
grant of annual
certificate.**

9. The grant of the annual certificate shall be **subject**, in addition, to the following conditions:—

- (1) In colleges affiliated or recognised in Arts, Science, Teaching and Law, the certificate shall not be granted unless a student has kept three-fourths of the attendances prescribed by the college in the course of instruction followed by him during the year, and in Institutions approved by the Syndicate under the regulations for Titles and Certificates of Proficiency and Degree in Oriental Learning, unless he has kept three-fourths of the attendances prescribed by the institution in the particular course of study for which the certificate is issued.
- (2) In colleges of Science, the certificate shall not be granted unless a student has kept three-fourths of the attendances prescribed by the college in the course of instruction followed by him during the year, in colleges in Medicine unless he has attended four-fifths of the lectures in each course, and in colleges of Engineering unless he has kept three-fourths of the attendances prescribed by the college.
- (3) The certificate shall not be granted unless the student has completed the course of instruction to the satisfaction of the authorities of his College and his progress and conduct have been satisfactory.

Students for want of Progress Certificate to undergo additional instruction.

10. In the Intermediate or the Pass B.A. Degree Course a student who has failed to earn the progress certificate at the end of the first year's course shall be required to rejoin the first year class for another full year.

A student who has not been selected for the March-April University Examination but who at the close of the academic year is certified by the Principal to have made such **satisfactory progress** that he may be admitted to

examination, may appear for a subsequent examination without further attendance at a college, provided that he has earned the necessary attendance certificate.

A student who has failed to earn the progress certificate for the second academic year must attend college to receive such additional instruction as the Principal may, in his discretion, prescribe so as to enable him to earn the required progress certificate.

11. The Regulations governing attendance and progress and combination of attendance shall apply *mutatis mutandis* to students in the Faculty of Law.

Forms of Certificates.

12. The certificates shall be drawn up in the prescribed forms:—(*Vide Appendix XVII*).

CHAPTER XXXVII.

Admission to Examinations and Exemption from Annual or Term Certificates.

LAWS.

(Regulations and Ordinances).

1. Only persons whose names are contained in the Register of Matriculates shall be admitted to any Examination other than the Matriculation Examination.

**Regulation
Admission to
Examination only
after Matricula-
tion.**

2. Before being admitted to an examination a candidate must have been registered therefor. A candidate shall be registered afresh on each occasion on which he wishes to present himself for an examination and a candidate shall be registered only after he has submitted an application in the prescribed form and paid the fee prescribed.

**Regulation
Registration of
application.**

3. Every candidate for an examination shall produce evidence of having previously passed the qualifying examination prescribed by the Laws, if any.

**Regulation
Conditions for
admission—Preliminary qualification.**

4. He shall also, unless exempted by a special order of the Syndicate made either on the recommendation of the Academic Council or as otherwise provided under the Laws, produce in the prescribed form the certificate or certificates required by the Laws of the University.

Regulation
Production of
attendance Certi-
ficates

5. No candidate shall be permitted to sit for an examination unless his annual (term) certificates of attendance, conduct and progress or the order of exemption granted to him has been received by the Registrar *before the commencement of the Examination.*

6. In the case of the Matriculation Examination, the Syndicate may grant exemption from the production of the prescribed certificate of attendance to—

Regulation
Admission to
Examination only
on production of
certificates

(i) Candidates who have been educated privately or in schools outside the territorial limits of the Madras University, provided that in each case they produce satisfactory evidence that they are of good character and that they have received suitable instruction.

**Note.*—Study in a non-recognized school will not be considered private study for the purpose of this Ordinance.

For the purpose of this rule, study in the following High Schools shall be recognized by the Syndicate:—

- (a) Schools recognized by the Director of Public Instruction of Madras as teaching to the Matriculation standard.
- (b) Schools in Ceylon certified by the Director of Public Instruction, Ceylon, to be organized and

conducted so as to ensure efficient training to the standard of the Matriculation Examination.

- (ii) A *bona fide* teacher, provided (a) he has completed a course of study in the Fourth Form and has qualified for promotion to the Higher Form, and (b) he satisfies the conditions laid down in Regulation 8 (i) of this Chapter.

7. In the case of other examinations, the Academic Council may recommend the grant of special exemption by the Syndicate subject to the condition that no such application shall be granted in the case of a student studying in a college or a Department of the University, without a recommendation from the Head of the college, or the Head of the University Department in which he is a student.

8. The Syndicate may grant exemption:—

Regulation (a) To a student studying in a college or in a Department of the University, who has failed to keep three-fourths of the attendances prescribed by the Institution or the University Department of which he is a student, and is unable to produce his annual certificate of attendance, conduct and progress, provided that—

- (i) the shortage of attendance does not exceed five days; and
- (ii) the Syndicate considers that the reasons given for failure to keep the prescribed attendance are satisfactory.

If the shortage of attendance exceeds five days, the exemption shall be granted only on the recommendation of the Academic Council or its Standing Committee.

(b) To a student studying in a college in which the language in respect of which exemption is sought is not taught, provided that the Syndicate is satisfied—

Exemption to Students in a Language (other than English) when and how granted

(i) as to the reasons assigned by the student for not studying in a college where the language in question is taught, and

(ii) as to the arrangements made for instruction being received by the student in that language in the following examinations:—

<i>Name of Examination.</i>	<i>Part or Group for which exemption may be granted.</i>
Intermediate (New Regulations).	Part II—Second Language. One of the languages in Gr. B of Part III.
B.A. (New Regulations).	Part II—Second Language. Gr. (v) of Part III.

(c) To a candidate who has passed the Intermediate Examination in Arts and Science to enable him to appear again for the same examination offering a different set of optional subjects under Part III of the Intermediate courses, provided he has undergone the course of study prescribed in the set of subjects selected and that he has attended a college for a further period of not less than one year. [He shall be exempted from re-examination in English and the Second Language.]

Exemption in a new subject—Intermediate Examination

(d) To a candidate who, having passed Parts I and II (New Regulations) or Part I (Old Regulations) and failed in Part III (New Regulations) or Part II (Old Regulations) of the Intermediate Examination in Arts and Science on at least two occasions in one set of optional subjects, desires to present a new set of optional subjects from the production of the first year's certificate of attendance to appear for Part III (New Regulations) of the Intermediate Examination in Arts and Science.

(e) To a candidate who, having passed Parts I and II (New Regulations) or Part I (Old Regulations) and failed in Part III (New Regulations) or Part II (Old Regulations) of the B.A. Degree Examination on at least two occasions in one set of optional subjects, desires to present a new set of optional subjects, provided that the new subjects do not require a course of laboratory training from the production of the first year's certificate of attendance to appear for Part III (New Regulations) of the B.A. Degree Examination.

(f) To a candidate for the B.A. Degree Examination who has passed at least one of the divisions of the B.A. Degree Examination under the Old Bye-laws and has been permitted to appear (in accordance with the provisions of the Transitory Regulations) for the B.A. Degree Examination under the New Regulations in the Parts or Groups corresponding to the Divisions of the B.A. Degree Examination under the Old Bye-laws which he has not passed.

(g) To a candidate for the Final M.B. & B.S. Degree Examination who having failed in the examination is unable to produce an additional certificate of attendance for six months in one or more subjects of the examination in accordance with the Regulations, provided that he is recommended for exemption by the Principal of a Constituent or an Affiliated Medical College, in which he is studying.

(h) To a candidate from the production of either or both of the annual certificates of attendance, required for the Oriental Title Examinations, provided that he—

**Exemption -
Oriental Titles
Examination**

(i) is at the time of the examination at least twenty years of age; and

(ii) is certified by a Member of the Board of Studies of the Madras University in the language concerned or by the head of an

Oriental College in the subject in which his institution is approved by the Madras University, to be qualified by his attainments to appear for the examination—

provided also that the above exemption shall not be granted to a candidate who, within the preceding four years from the date of the certificate above referred to, failed to secure 30 per cent. of the marks in the compulsory paper in Sahitya and Elementary Grammar prescribed for the Sanskrit Entrance Examination conducted by the Educational Department, having sat for it; or who failed to secure eligibility for admission to any branch or Group of the Oriental Title Course, having sat for the paper in the Entrance Examination relating to that Branch or Group.

Exemptions—
Bona-fide
teachers.

(i) To a *bona-fide* teacher under the following conditions:—

A *bona-fide* teacher employed in a School recognised by the Madras University and by the Directors of Public Instruction, Madras, Cochin, Travancore, and Hyderabad, the Chief Educational Officer, Pudukottah, or the District Educational Councils, and situated within the jurisdiction of the Madras and Annamalai Universities shall be entitled to apply for exemption.

A teacher employed in a school in the State of Sandur and Banganapalle shall also be entitled to apply for exemption provided his application is recommended by the Director of Public Instruction or corresponding officer of the State concerned.

Applications for exemption should be made by those teachers with the permission of their managements and managements should certify

that the applicants are bona-fide teachers in their respective Institutions.

Bona-fide teachers applying for exemption, should have been in service as whole-time teachers for not less than six years on the date of such application.

(i) *Intermediate Examination.*

An applicant for exemption to appear for the Intermediate Examination should either have passed the Matriculation Examination of this University or an examination recognised as equivalent thereto or have been placed on the list of candidates declared eligible for admission to courses of study in this University on the results of the S.S.L.C. Examination; provided further that he shall not be allowed to appear for the examination until two years have elapsed between the date of passing the Matriculation Examination or other qualifying Examination and that of appearing for the Intermediate Examination.

(ii) *B.A. Degree Examination.*

Every teacher applying for exemption to appear for the B.A. Degree Examination should have passed the Intermediate Examination of the Madras University or an Examination recognised as equivalent thereto; provided that he shall not be allowed to appear for the Examination until two years have elapsed between the passing of the Intermediate or other qualifying Examination and appearing for the B.A. Degree Examination;

provided further that if he proposes to appear for a Science Group which requires a practical training in a Laboratory, he shall produce a certificate of having done the prescribed laboratory work from the Professor of a Constituent or an affiliated first-grade college counter-signed by the principal of that college.

9. In cases other than those specifically provided for in the above Laws or in other Statutes, Regulations or Ordinances, the Syndicate may, by special order, grant exemption on the recommendation of the Academic

**Act and Regulation
Other Exemptions—General
conditions.**

Council. Any such exemption may be made subject to such conditions as the Syndicate may think fit.

10. Applications for exemption from students not studying in a college shall in every case be forwarded so as to reach the Registrar before the first October and the first March preceding the March-April and September Examinations.

Ordinance.
**Exemption ap-
plications—when
to be made**

Ordinance
**Exemption
order permanent**

11. Orders of exemption granted under the preceding Laws shall be permanent.

CHAPTER XXXVIII.

*Matriculation Examination.

(Ordinances.)

1. The Matriculation Examination shall be open to candidates from the following:—

- (a) Schools recognized by the Director of Public Instruction of Madras as teaching to the Matriculation standard.
- (b) Schools in Ceylon certified by the Director of Public Instruction, Ceylon, to be organized and conducted so as to ensure efficient training to the standard of the Matriculation Examination.
- (c) Schools in Indian States of Southern India certified by the Durbars of the States in which they are situated to be organized and conducted so as to ensure efficient training to the standard of the Matriculation Examination.

* *Note.*—The (Revised) Laws take effect from the examinations of March 1938.

- (d) Schools in the French Territories in South India certified by the Director of Public Instruction, French India, to be organized and conducted so as to ensure efficient training to the standard of the Matriculation Examination.

2. The Syndicate shall have the power to exempt the following from attendance at a school for the purpose of enabling them to appear for the Matriculation Examination:—

- (a) Candidates who hold completed School Leaving Certificates issued under the authority of the Government of Madras or such other authority as may be accepted by the Syndicate.
- (b) Candidates who were educated privately or in Schools outside the territorial limits of the Madras University, as defined in the Indian Universities Act, 1904, provided that in each case they produce satisfactory evidence that they are of good character and that they have received suitable instruction.

Applications for exemption under this paragraph must be forwarded so as to reach the Registrar before the 1st October preceeding the examination.

3. No candidate shall be admitted to the Matriculation Examination unless he is due to complete the age of fifteen years on or before the first day of July of the year in which he applied for the Examination.

4. The course of study shall consist of five parts.

(1) *English Language*.—Text books shall be prescribed of which a detailed knowledge may be required.

(2) *A Second Language*.—One of the following languages at the option of the candidate:—

(a) Classical ...	{	Sanskrit.	Arabic.
		Greek.	Persian.
		Latin.	Hebrew.
			Syriac.

	{ (1) Foreign ...	French.	German.
(b) Modern ...	{	{ Tamil.	Marathi.
		{ Telugu.	Oriya.
	{ (2) Indian ...	{ Malayalam.	Hindi.
		{ Kannada.	Burmese.
		{ Urdu.	Sinhalese.

In each language, there shall be prescribed text-books. In the Indian languages, the texts prescribed shall be mainly in modern prose.

- (3) *Mathematics*.—The subjects included shall be (a) Arithmetic, (b) Algebra, and (c) Geometry.

(a) *Arithmetic*.—The principles and processes of Arithmetic applied to whole numbers and vulgar and decimal fractions. The metric system. Approximations to a specified degree. Contracted methods of multiplication and division of decimals. Practice, ratio and proportion. Square and Cubic measure. Direct applications of the term *per cent*; including interest, present-worth and discount, stocks and shares, profit and loss, exchange, square root.

(b) *Algebra*.—Symbolical expression of general results in Arithmetic. Algebraical laws and principles and their applications. Factorization of simple functions. Equations, conditional and identical. Equations of the first degree in one, two and three variables and the principles involved in their solution. Solution of problems by means of such equations. Equations of the second degree in one variable and the

principles involved in their solution. Theory of positive integral indices. Square root. Graphs of simple algebraic functions.

- (c) *Geometry — Experimental.* — Construction of lines, angles, circles, perpendiculars, parallels, tangents, chords, triangles and regular polygons from given data. Division of lines in given ratios. Bisection of angles. Graphical extraction of arithmetical square roots.

Theoretical.—Angles at a point. Parallel straight lines. Triangles and rectilinear figures. Areas, simple loci. Elementary propositions on circles. Proofs of the constructions in Experimental Geometry. Easy deductions.

A detailed syllabus in Geometry shall be prescribed.

- (4) *Elementary Science.*—The subjects included shall be Elementary Physics and Elementary Chemistry as defined in a syllabus.
- (5) *History and Geography.*—

History—

- (1) Outlines of the History of Great Britain and Ireland—a period or periods to be prescribed each year, defined in a syllabus.
- (2) Outlines of the History of India—a period or periods to be prescribed each year, as defined in a syllabus.

Geography—

- (1) Geography of India, Great Britain and Ireland, as defined in a syllabus.
- (2) Geography of Europe, Asia, Africa, America and Australia, as defined in a syllabus.

The Examination shall comprise five divisions.

(1) *English*.—There shall be two papers, each of three hours' duration and carrying 100 marks each. The first paper shall be mainly upon the prescribed texts and shall be designed to test the candidate's proficiency in composition and his knowledge of grammar and idiom. The second paper shall contain questions on (a) composition and paraphrase not based on the prescribed texts, and (b) the conversion, expansion, and condensation of sentences. Some of the exercises in the second paper shall be based on the texts. Paraphrase shall be treated as a test of the candidate's power to understand and give the general meaning of passages of prose or poetry.

(2) *Second Language*.—In each language, there shall be one paper of three hours' duration and carrying a maximum of 100 marks. The paper shall consist of two parts and not less than half the total marks shall be assigned to the second part. In a classical or foreign language, the first part shall contain passages for translation from the text-books and questions on grammar and idiom, and the second shall contain unseen passages for translation from the selected language into English and from English into the selected language. In an Indian language, the first part shall contain questions on the text-books and on grammar and idiom, and the second part shall consist of original composition and translation from English to the selected language.

(3) *Mathematics*.—There shall be two papers—

(1) Arithmetic and 3 hours. 100 marks.
Algebra.

(2) Geometry 3 hours. 100 marks.

(4) *Elementary Science*.—There shall be one paper of three hours' duration carrying 100 marks.

(5) *History and Geography*.—There shall be two papers—

(1) History .. 3 hours. 100 marks.

(2) Geography .. 3 hours. 100 marks.

6. A candidate shall be declared to have passed the examination if he obtains not less than thirty-five per cent. of the marks in each of the divisions, provided that a candidate who fails to obtain the required minimum in one division only but who passes in English and gains fifty per cent. of the total number of marks in the whole examination shall be declared to have passed. All other candidates shall be deemed to have failed in the examination.

Successful candidates who obtain not less than sixty per cent. of the total marks shall be placed in the first class. Successful candidates who obtain less than sixty per cent. but not less than forty-five per cent. of the total marks shall be placed in the second class. Other successful candidates shall be placed in the third class.

CHAPTER XXXIX.

Intermediate Examination in Arts and Science.

1. The Intermediate Examination in Arts and Science shall be open to candidates who—

(a) (1) have passed the Matriculation examination of this University or of any other Indian University, or have passed a qualifying examination of any University outside India which may be accepted by the Syndicate as equivalent to the Matriculation Examination of this University; or

Admission to
Course.

(2) have (i) completed (a) the S.S.L. Certificate issued by the Government of Madras, or any of the Indian States of Travancore,

Cochin or Hyderabad, or (b) the E.S. L. Certificate issued under the orders of the Government of Madras or the Administration of Bangalore and Coorg; and (ii) have been declared eligible for admission to a course of study in this University;

or

(3) have completed the S.S.L. Certificate or the E.S.L. Certificate issued under the orders of the Government of Madras and have been declared eligible for admission to a University course of study by the Andhra or Annamalai University and recognized by the Syndicate of this University; *or*

) have passed an Examination conducted by any University, Board of Secondary Education, or other duly constituted authority in any Province or State in India and have qualified themselves in the respective examinations or have been declared eligible for admission to a University course on the results of the examination in the respective Province or Indian State, accepted by the Syndicate as equivalent to the Matriculation Examination of this University;

and (b) have undergone in a Constituent or an Affiliated College a course of study in the prescribed subjects for a period of not less than two academic years or six terms.

2. The course shall consist of three
Course of Study. Parts.

Part I—English.

Books shall be prescribed in English Prose and Poetry. In prescribing them, the following objects shall be kept in view:—

(a) the improvement of the students' knowledge of the English language and of its literature;

- (b) the development of their ability to extend the range of their knowledge by training them to read with ease and discrimination.

Course of Study—
(*contd.*)

The course shall consist of—

- (1) The detailed study of certain prescribed books. There shall be one play of Shakespeare, 1000 lines of Poetry, and two Prose books.
- (2) The perusal, as distinct from a detailed study, of other prescribed books. There shall be not more than three books.

Note.—The books prescribed from year to year under (1) and (2) shall be of the same average length and difficulty. Certain of the prescribed books which are to be studied in detail may be retained from year to year. The books which are prescribed for perusal under (2) shall be changed every year.

- (3) Such instruction and exercise in rhetoric and composition as may be expected to develop the students' powers of understanding English and writing it clearly, concisely, and correctly. This instruction should include the following topics:—

Choice of words. The paragraph as the unit of prose composition. The sentence as a constituent portion of the paragraph. The periodic and the loose sentence. Unity, balance and emphasis in relation to paragraph and sentence. Logical sequence of sentences and paragraphs and explicit references to preceding paragraph, as securing coherence in an essay.

Part II.—A Second Language.

Course of Study
—(*contd.*)

One of the following languages at the option of the candidate:—

(a) Classical	{	Sanskrit.	Arabic.
		Greek.	Persian.
		Latin.	Hebrew.
			Syriac.

(b) Modern...	{	(1) Foreign.	French.	German.
			Tamil.	Marathi.
	{	(2) Indian.	Telugu.	Oriya.
			Malayalam.	Hindi.
			Kannada.	Burmese.
			Urdu.	Sinhalese.

In each of the languages, text-books shall be prescribed from time to time.

The course shall comprise the study of text-books and grammar, translation, and in the case of Indian languages original composition. The scope of the course may be indicated by the allotment of four hours a week for instruction.

The main object of the study of an Indian language is to train the student to use it as a vehicle of current thought.

Part III—Optional Subjects.

Three subjects to be selected out of the following Groups A, B and C at the option of the candidate:—

Group A ..	{	Mathematics.
		Physics.
		Chemistry.
		Natural Science.
		Geography.
Group B ..	{	Logic.
		Indian History.
		Ancient History.
		Modern History.
		A third language (to be selected from the list of languages prescribed under Part II).
Group C ..	{	Economic History of England and Economic Geography.
		Elements of Commerce and Accountancy.
		Agriculture.
		Electrical Engineering.
		Mechanical Engineering.

Group C— <i>contd.</i>	{	Surveying.
		Drawing.
		Indian Music.
		Western Music.
		Architecture.

The subjects prescribed for the Preliminary Division of the examination for any one of the following Oriental Titles:—

Group D*	{	Siromani.
		Vidvan.
		Afzal-ul-Ulama.
		Munshi-i-Fazil.

The Syndicate shall have power to permit candidates, who either have completed their Intermediate or their B.A. with Parts II and III in the Intermediate in Groups other than Group D of the Intermediate and desire to appear for the B.O.L. (Bachelor of Oriental Learning) to sit for the Intermediate Examination in Group D under Part III without the production of the prescribed certificates of attendance at a college approved by the University.

Text books or Syllabuses shall be prescribed in the above subjects.

Scheme of Examination. 3. The examination shall consist of three Parts.

(a) *Part I—English.*—There shall be three papers.

Maximum
Marks.

Paper 1.—Shakespeare and Poetry
(Prescribed books) 3 hours .. 100

The candidates shall not be required to answer more than five questions.

* To be taken by persons who desire to proceed to the B.O.L. Degree. (*Vide* Chapter LXI, *infra*).

		Maximum Marks.
Paper 2.—Prose (Prescribed books) 3 hours	..	100
The candidates shall not be required to answer more than five questions.		
Paper 3.—Composition 3 hours	..	100

The paper shall contain exercises designed to test the candidates' power to apply the principles studied in the course; in particular it shall contain (a) exercises in epitomizing and paraphrasing passages of prose and poetry which shall not be taken from any of the books prescribed for detailed study or for perusal and (b) subjects for two short essays drawn from the subject-matter of the books prescribed for perusal, as distinct from detailed study and from topics of general interest.

Note.—All papers in English shall be regarded as a test of the candidates' command of correct English and that in valuation emphasis shall be placed upon this aspect of the work.

(b) *Part II.—A Second Language.*

In each of the languages, there shall be two papers of three hours duration each. Each paper shall carry a maximum of 100 marks.

The first paper shall contain questions on text-books prescribed for detailed study, grammar and idiom. The second paper shall contain in the case of classical languages and foreign languages mentioned under Regulation 2 (Part II) questions on translation from the selected language into English, and *vice versa*, and in the case of the Indian languages mentioned under Regulation 2 (Part II) questions on the books prescribed for non-detailed study, original composition, and translation from English into the selected Indian language.

Note.—The questions set in Indian languages for translation from English into the selected language and for original composition shall be common to all languages.

(c) *Part III.—Optional Subjects.*

(i) Three subjects to be selected out of the three Groups A, B and C mentioned in Regulation 2 (Part III) of this Chapter at the option of the candidate;

provided that a candidate who wishes to proceed to a degree in Arts or Science shall be required to pass in *two at least* of the optional subjects included in Group A or Group B;

provided that a candidate who has passed in the two Commercial subjects under Group C may proceed to the B.A. Degree in Group (iv-b) Economics and History; and a candidate who has passed in two Fine Arts subjects, including Indian Music under Group C, may proceed to the B.A. Degree in Group (vi) Indian Music;

provided further that a candidate who wishes to proceed to the Degree in Commerce shall be required to pass in “Elements of Commerce and Accountancy” under Part III Group C.

(ii) Two papers shall be set in each subject and each paper shall carry a maximum of 75 marks.

In the case of Agriculture, Surveying, Drawing, Indian Music and Western Music, the second paper shall be the practical examination in the subject.

Each paper shall be of two hours’ duration, except in the case of (1) languages (third language) in which the two papers shall be of three hours’ duration each, and as detailed under Part II, (2) Indian Music and Western Music, where the first paper shall be of three hours’ duration and (3) all History papers which shall be of two and a half hours’ duration.

4. No candidate shall be admitted to the Examination unless he has been registered as a Matriculate of this University, and has undergone the prescribed course in a Constituent or an Affiliated College for a period of not less than two academic years or six terms.

Admission to Examination-conditions.

5. A candidate appearing for the examination on the first occasion shall apply for all the three parts of the examination, and thereafter may appear for any part or parts of the examination in which he has not already secured passing marks at a previous examination.

6. A candidate shall be declared to have passed the examination if he obtains not less than

Marks qualifying for pass. (1) 35 per cent. of the marks in Part I, English, (2) 35 per cent. of the marks in Part II, a second language, and (3) 35 per cent. in each of the three subjects selected under Part III.

All other candidates shall be declared to have failed in the examination.

A candidate may pass the whole examination by passing in the several parts at the same or at different examinations.

A candidate shall be declared to have passed in any part of the examination on his obtaining in that part the minimum number of marks prescribed above.

Pass in Parts.

7. Candidates who pass in all the parts at the same examination, and who obtain not less than 50 per cent. of the total number of marks shall be placed in the first class. All other successful candidates shall be placed in the second class.

Classification of successful candidates

Candidates who pass in all the parts at the same examination, and obtain not less than 60 per cent. of the marks in any subject shall be declared to have gained distinction in that subject.

Marks required for distinction in subjects.

Candidates who pass the whole examination by passing in the several parts at separate examinations shall be placed in a separate list.

Classification of successful candidates in Parts.

8. A candidate who has passed the Intermediate Examination in Arts and Science shall be permitted to appear again for the examination in a new subject or subjects under Part III, provided he has undergone the course of study prescribed in the new subject or subjects selected and has attended a College for a further period of not less than one year. He shall be declared to have passed the examination if he obtains not less than 35 per cent. of the marks in each new subject.

Passed Intermediate how to qualify in additional subjects.

In the case of a successful candidate, a certificate to the effect that he has passed the Intermediate Examination in Arts and Science with the specified additional subject or subjects shall be issued.

9. Notwithstanding anything contained in Regulation 4 *supra*, candidates who have undergone the prescribed course of study for the old F.A. Examination or the Intermediate Examination in Arts and Science under the Regulations (or bye-laws) in force prior to 1927-28, and are qualified to sit for the examination shall be permitted to appear for the Intermediate Examination in Arts and Science under the existing Regulations without producing fresh certificates of attendance. Such candidates shall appear for the three parts of the examination, provided that candidates who have passed the Intermediate Examination in Arts and Science under the old Regulations in any part shall be deemed to have passed in the corresponding part or parts under the existing Regulations, viz., Part I corresponding to Parts I and II, and Part II to Part III. Such candidates will be permitted to take any three of the subjects prescribed under Part III (optional subjects) and taken by candidates appearing through a Constituent or an Affiliated College under the existing Regulations.

Transitory provision for candidates studied prior to 1936-37.

Candidates desiring to appear under this Regulation shall obtain the previous permission of the Syndicate to sit for the examination by application made to the Registrar

on or before the 1st November or 1st April preceding the March or September examination as the case may be. Permission once granted shall be permanent.

CHAPTER XL.

Degree of Bachelor of Arts.

1. Candidates for the B.A. Degree Examination shall **Admission to B A Examination—** be required to have passed the Intermediate Examination in Arts and Science of this University, and to have satisfied the requirements under (i) of (c) Part III of Regulation 3 of the Chapter *re* Intermediate Examination in Arts and Science, or an Examination accepted by the Syndicate as equivalent thereto under conditions, if any, prescribed, and to have subsequently undergone a prescribed course of study in a Constituent or an Affiliated College for a period of not less than two academic years or six terms.

2. The course of study shall comprise the following **Course of Study** subjects, according to a syllabus to be prescribed from time to time:—

Part I.—English.

The course shall comprise:—

(a) The study in detail of certain prescribed books. The works prescribed for detailed study shall consist of the following:—

(1) Shakespeare: (two plays).

(2) Modern Poetry: from Milton to the present day, about 2,000 lines.

(3) Modern Prose: from Addison to the present day, not more than three books.

(b) Composition on matter supplied by books prescribed for perusal. The works prescribed for perusal as a basis for composition shall consist of not more than three books which may be novels, essays or works of general value.

Note.—All papers in English—Part I—shall be regarded as a test of a candidate's command of correct English and in valuation greater emphasis shall be placed upon this aspect of the work than upon knowledge of the substance of the texts.

Part II.—A Second Language.

The course shall comprise the study of any one of the following Classical or Modern (Foreign or Indian) Languages, at the option of the candidate, according to a syllabus or text-books or both to be prescribed from time to time:—

(a) Classical	...	{	Sanskrit.	Arabic.
			Greek.	Persian.
			Latin.	Hebrew.
				Syriac.
(b) Modern	{	(1) Foreign	French.	German.
			Tamil.	Marathi.
		(2) Indian	Telugu.	Oriya.
			Malayalam.	Hindi.
			Kannada.	Burmese.
			Urdu.	Sinhalese.

Part III.—Optional Subjects.

One of the following groups:—

(i-a) Mathematics.

(i-b) Mathematics.

(ii) Any two of the following subjects, one of which shall be on the main standard, and the other on the subsidiary standard:—

Mathematics. Geology.

Physics. Physiology.

Chemistry. Mechanical Engineering.

Botany. Electrical Engineering.

Zoology.

Course of Study
—(contd.)

provided that Mechanical Engineering or Electrical Engineering shall be taken only as a Subsidiary subject by the candidates taking Physics as their Main subject, and provided that the subject was previously taken by them for the Intermediate Examination.

- (iii-a) Philosophy.
- (iii-b) Philosophy.
- (iv-a) History and Economics.
- (iv-b) Economics and History.
- (v) Languages other than English.
- (vi) Indian Music.
- (vii) Geography.
- (viii) Islamic History and Culture.

In each subject under Part III, a Syllabus or text books to indicate the scope of the subject shall be prescribed (for Syllabuses *vide* **Appendix III**).

The course of study shall be as follows:—

Group (i-a)—Mathematics.

The course shall comprise the study of (1) Algebra and Trigonometry, (2) Calculus, (3) Geometry (Pure and Analytical), (4) Dynamics, (5) Astronomy, (6) Hydrostatics, Properties of Matter and Heat.

Group (i-b)—Mathematics.

The course shall comprise the study of (1) Algebra and Trigonometry, (2) Calculus, (3) Geometry (Pure and Analytical), (4) Dynamics, and any two of the following subjects:—

- (1) Astronomy.
- (2) Elements of Statistics.
- (3) Economics.
- (4) Pure Geometry.
- (5) Analysis.

Group (ii)—Mathematics—Main.

The course shall comprise the study of (1) Algebra and Trigonometry, (2) Calculus, (3) Geometry (Pure and Analytical), and (4) Dynamics.

Course of Study
—(contd.)

Mathematics—Subsidiary.

The course shall comprise the study of the following subjects : Algebra, Trigonometry, Analytical Geometry and Calculus.

Physics—Main.

The course shall comprise the study of the following subjects:—

Dynamics, Properties of Matter and Hydrostatics, Heat and Light, Electricity, Magnetism and Sound.

Physics—Subsidiary.

The course shall comprise the study of the following subjects:—

Properties of Matter, Hydrostatics, Heat, Light, Electricity and Magnetism (*vide Appendix III* for syllabus).

Chemistry—Main.

The course shall comprise the study of the following subjects:—

General Theoretical and Physical Chemistry, Inorganic Chemistry and Organic Chemistry.

Chemistry—Subsidiary.

The course shall be of a less advanced character than that for candidates taking Chemistry of the main standard (*vide Appendix III* for syllabus).

Botany, Zoology, Geology and Physiology—as a Main and a Subsidiary subject.

The course shall comprise the study of the subjects detailed in the syllabuses (*vide* **Appendix III**) and the knowledge required of the candidates for the examination in the subsidiary subject shall be less detailed than that required for a pass in the main subject.

Mechanical or Electrical Engineering shall be taken only as a subsidiary subject to Physics. The course of study shall be as detailed in the syllabus (*vide* **Appendix III**).

Note:—The courses of study and examinations in all the subjects on the subsidiary standard shall be common for both B.A. and B.Sc. Degree Examinations.

Group (iii-a)—Philosophy.

Course of Study The course shall comprise the study
--(*contd.*) of the following subjects:—

1. Psychology.
2. Ethics.
3. European Logic (Part III of Creighton's Introductory Logic and the first four lectures of Bosanquet's Essentials of Logic).
4. Indian Logic or an Indian Philosophical Classic (to be prescribed from time to time).
5. A European Philosophical Classic (to be prescribed from time to time.)

Group (iii-b)—Philosophy.

The course shall comprise the study of the following subjects:—

1. Psychology
2. Ethics.
3. Politics (the paper will comprise two Parts—Part I consisting of questions bearing on Political Theory and Part II on Comparative Politics—candidates being expected to attempt at least one question from each Part).

4. Outlines of European History or Constitutional History of Great Britain and Ireland.

5. General Indian History.

The syllabuses and papers for 1 and 2 will be the same as for Group (iii-a)—Philosophy—and the syllabuses and papers for 3, 4, and 5 will be the same as for Group (iv-a)—History and Economics.

Group (iv-a)—History and Economics.

Course of Study The course shall comprise the study
—(contd.) of the following subjects:—

- (1) General Indian History,
- (2) Constitutional History of Great Britain and Ireland,
- (3) Outlines of European History.
- (4) Economics—General, and
- (5) Politics.

In each of the above subjects a Syllabus for the course of study or text-books to indicate the scope of the subject or both shall be prescribed.

Group (iv-b)—Economics and History.

The course shall comprise the study of the following subjects:—

- (1) Economics—General (in common with Group (iv-a)).
- (2) Economics—Special.
- (3) Modern Economic History of England and India (from 1600 A.D.)
- (4) & (5) Any two of the following three subjects:—

Politics	} (in common with Group (iv-a)).
Outlines of European History	
General Indian History	

The paper, "Economics—Special" shall consist of two parts (a) Public Finance and (b) Rural Economics, both with special reference to India. Public Finance will include the economic functions of the State, the raising and spending of taxes and public loans and the regulation of tariffs. Rural Economics will include the organisation and financing of Agriculture, the Co-operative Movement and other allied problems.

Group (v)—Languages other than English.

Candidates shall select any one of the following languages, which shall be taken in conjunction with the cognate subject or related language specified against each language.

Course of Study
—(contd.)

<i>Selected Language.</i>		<i>Cognate Subject or Related Language.</i>
Sanskrit	..	Early Indian History.
Persian or Arabic	..	Early Muslim History.
Urdu	..	Indian History—Muslim Period or Arabic or Persian.
Tamil, Telugu, Malayalam or Kannada.		Early South Indian History or Sanskrit.
Marathi	..	History of the Marathas or Sanskrit.
Oriya	..	Early History of Orissa or Sanskrit.
Greek or Latin	..	A Special Period of Greek or Roman History respectively.
German or French	..	A Special Period of Modern European History.
Hebrew	..	History of the Jews.
Syriac	..	History of the Syrians.

The course of study in the several languages and the related subjects shall be in accordance with a syllabus or text-books to be prescribed from time to time.

Group (vi)—Indian Music.

The course of study shall be in accordance with the syllabus as given in **Appendix III.**

Group (vii)—Geography.

The course shall comprise the study of (i) Regional Geography, (ii) Economic Geography, (iii) Physical Basis of Geography and (iv) Cartography.

The syllabuses for the above subjects shall be prescribed from time to time.

Group (viii)—Islamic History and Culture.

The course shall comprise the study of the following subjects:—

- (1) General History of Islam.
 - (2) Civilization and Culture of Islam.
 - (3) History of India with reference to the rule of Islam.
 - (4) Politics. }
 - (5) Economics }
- } in common with Group (iv-a).

The syllabuses for the subjects and text-books, if any, shall be as prescribed in **Appendix III.**

Scheme of Examination—Part I 3. The scheme of Examination shall be as follows:—

Part I—English.

There shall be four papers each of three hours' duration and carrying a maximum of 100 marks each.

			Hours.	Marks.
1.	Shakespeare	.. ..	3	100
2.	Modern Poetry	.. ..	3	100
3.	Modern Prose	.. ..	3	100
4.	Composition	.. ..	3	100

Part II—A Second Language.

In the selected language, there shall be two papers each of three hours' duration and carrying a maximum of 100 marks each.

Scheme of Examination—Part II.

				Hours.	Marks.
Paper I	..	..	..	3	100
Paper II	..	..	..	3	100

Each paper shall comprise questions as detailed below :—

CLASSICAL LANGUAGES.

Sanskrit.—The first paper shall relate to the prescribed text-books and grammar taught with reference to them. The second paper shall consist of three parts, the first part consisting of Sanskrit passages partly from the text-books and partly from passages not contained in the text-books for translation into English, the second part consisting of a passage or passages in English for translation into Sanskrit and the third part relating to the History of Sanskrit Literature omitting the History of the Vedic period and of technical literature (such as Medicine, Astronomy, Astrology, Mathematics and systems of Philosophy).

Greek and Latin.—The first paper shall consist of passages for translation from the text-books, questions on idiom and grammar, and questions on the subject matter of the text-books. The second paper shall consist of a piece of English Prose for translation into Greek and Latin and passages not contained in the text-books for translation into English.

Hebrew, Syriac, Arabic and Persian.—The first paper shall consist of questions on (1) Text-books, (2) Grammar and (3) Rhetoric and Prosody of an elementary nature, and the second paper shall consist of questions on translation from the selected language into English and *vice versa* and on the History of Literature.

FOREIGN LANGUAGES.

French and German.—The first paper shall consist of passages for translation from the text-books, questions on

idiom and grammar, and questions on the subject matter of the text-books. The second paper shall consist of a subject for composition chosen from the prescribed books, and unseen passages shall be set for translation from French or German into English and *vice versa*.

INDIAN LANGUAGES.

The first paper shall comprise questions:

Urdu.—On (1) Prescribed text-books, (2) Grammar, (3) Rhetoric and Prosody of an elementary nature and (4) on the History of Literature.

All other Languages.—On Prescribed text-books in Poetry and Prose, Grammar and History of Language and Literature.

The second paper in all languages shall comprise:

(1) a passage or passages in English for translation into the selected language;

(2) a subject for essay having reference to modern thought;

(3) a subject for essay based on books prescribed for non-detailed study.

Note.—One hour shall ordinarily be assigned for translation question and one hour for each part of composition.

Part III—Optional Subjects.

Group (i-a) Mathematics.—The examination shall consist of six papers (1) Algebra and Trigonometry, (2) Geometry (Pure and Analytical), (3) Dynamics, (4) Calculus, (5) Astronomy and (6) Hydrostatics, Properties of Matter and Heat as follows:—

**Scheme of Examination—Part III
i-a Mathematics.**

			Hours.	Marks.
1.	Geometry .. ..	..	3	90
2.	Algebra and Trigonometry ..	..	3	90
3.	Dynamics .. ..	..	2	70
4.	Calculus .. ..	..	2	70
5.	Astronomy .. ..	..	2	80
6.	Hydrostatics, Properties of Matter and Heat ..	..	3	100
		Total ..		<u>500</u>

Group (i-b) Mathematics.—The examination shall consist of four papers in the compulsory subjects*—Geometry (Pure and Analytical), Algebra and Trigonometry, Dynamics, Calculus, and one paper in each of the two optional subjects selected as follows:—

			Hours.	Marks.
1.	Geometry	.. ..	3	90
2.	Algebra and Trigonometry		3	90
3.	Dynamics	.. ..	2	70
4.	Calculus	.. ..	2	70
*5.	Optional subject I	.. ..	3	90
*6.	Optional subject II	.. ..	3	90
			Total ..	500

*Two out of the following:—Astronomy, Pure Geometry, Elements of Statistics, Analysis and Economics.

Group (ii) Mathematics—Main.

The examination shall consist of four papers*—Geometry (Pure and Analytical), Algebra and Trigonometry, Dynamics and Calculus as under (Group (i-b) above).

			Hours.	Marks
1.	Geometry	.. ..	3	100
2.	Algebra and Trigonometry	.. ..	3	100
3.	Dynamics	.. ..	2	75
4.	Calculus	.. ..	2	75
			Total ..	350

*Note.—The question papers in the above four subjects shall be common for the candidates in Groups (i-a), (i-b) and (ii).

Mathematics—Subsidiary.

Scheme of Examination—Part III—Gr.-ii—Mathematics.

The examination shall consist of two papers of three hours' duration each as follows:—

	Hours.	Marks.
Paper I (Algebra and Calculus) ..	3	75
Paper II (Trigonometry and Analytical Geometry) ..	3	75
Total ..		<hr/> 150 <hr/>

The problems set for the subsidiary papers will in general be of a lower standard than for the main papers in the same subjects and will, as far as possible, relate to scientific topics.

Physics—Main.

Scheme of Examination—Gr. ii—Physics. The examination in theory shall consist of four papers of three hours' duration each. There shall be a practical examination in which two exercises shall be set as follows:—

	Hours.	Marks.
1. Dynamics and Hydrostatics	3	60
2. Properties of Matter and Heat	3	60
3. Light and Sound ..	3	60
4. Electricity and Magnetism ..	3	60
Practical examination ..	6	90
Laboratory note-books ..	..	20
Total ..		<hr/> 350 <hr/>

At the Practical Examination candidates must submit to the Examiner or Examiners their laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates.

Physics—Subsidiary.

The examination shall consist of two papers of two hours' duration each and a practical examination of three hours' duration.

Scheme of Examination—Gr. ii—Physics.

	Hours.	Marks.
1. Hydrostatics, Properties of Matter and Heat ..	2	50
2. Light, Electricity and Magnetism ..	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

Chemistry—Main.

There shall be a written examination of three papers of three hours' duration each and a practical examination of two papers of six hours' and three hours' duration respectively.

Scheme of Examination—Gr. ii—Chemistry.

	Hours.	Marks.
1. General, Theoretical and Physical Chemistry ..	3	80
2. Inorganic Chemistry ..	3	80
3. Organic Chemistry ..	3	80
Practical Examination I (Inorganic Chemistry) ..	6	80
Practical Examination II (Organic Chemistry) ..	3	30
Total ..		<u>350</u>

At the Practical Examination candidates must submit to the Examiner or Examiners their Laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates. No special marks shall be assigned to the note-books, but the Examiners shall take into consideration the laboratory work when judging the practical examination results.

Candidates who fail to submit properly certified note-books of their practical work will be debarred from the practical examinations.

Chemistry—Subsidiary.

The examination shall be of a less advanced character than that for candidates taking Chemistry of the main standard. There shall be a written examination of two papers and a practical examination.

	Hours.	Marks.
General and Inorganic Chemistry	3	60
Organic Chemistry	2	40
Practical Examination ..	3	50
Total ..		<hr/> 150 <hr/>

The practical examination shall be held to test the candidate's ability to make experiments illustrating the subjects included in the course, identifying the more common metals and their compounds (containing not more than one acid and one base) and making simple volumetric analysis with standard solutions of acids, alkalis, potassium permanganate, and of iodine and sodium thiosulphate.

*Botany, Zoology, Geology and Physiology—as a
Main and a Subsidiary subject.*

The examination shall consist of—

1. In the Main subject—Two papers of three hours' duration each and two Practical Examinations of three hours' duration each.

2. In the Subsidiary subject—Two papers of two hours' duration each and one Practical Examination of three hours' duration.

Scheme of Examination—Gr II—Botany.

Botany—Main.

	Hours.	Marks.
Written Examination Paper I— Thallophytes, Bryophytes, Pteridophytes, Gymno- sperms and Histology ..	3	80
Written Examination Paper II— Morphology and Taxonomy of Angiosperms, Plant Physiology and General Principles	3	80
Practical Examination I ..	3	75
Practical Examination II ..	3	75
Laboratory note-books .. ..	..	20
Collections .. ..	..	20
Total ..	..	350

At the Practical Examination candidates must submit to the Examiner or Examiners their laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates.

Botany—Subsidiary.

	Hours.	Marks.
Written Examination Paper I— Thallophytes, Bryophytes, Pteridophytes, Gymnosperms and Histology.	2	50
Written Examination Paper II— Morphology and Taxonomy of Angiosperms, Plant Physiology and General Principles ..	2	50
Practical Examination ..	3	50
Total ..	..	150

**Scheme of Examination—Gr. ii—
Zoology.**

Zoology—Main.

	Hours.	Marks.
Written Examination Paper I—		
Invertebrata	3	100
Written Examination Paper II—		
Chordata	3	100
Practical Examination I ..	3	60
Practical Examination II ..	3	60
Laboratory note-books .. ..	..	30
Total ..		<hr/> 350 <hr/>

At the Practical Examination candidates must submit to the Examiner or Examiners their laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates.

Zoology—Subsidiary.

	Hours.	Marks.
Written Examination Paper I—		
Invertebrata	2	50
Written Examination Paper II—		
Chordata	2	50
Practical Examination	3	50
Total ..		<hr/> 150 <hr/>

**Scheme of Examination—Gr. i—
Geology.**

Geology—Main.

	Hours.	Marks.
Written Examination Paper I—		
All divisions other than Mineralogy and Petrology ..	3	80
Written Examination Paper II—		
Mineralogy and Petrology ..	3	80
Practical Examination I ..	3	75
Practical Examination II ..	3	75
Laboratory note-books .. ..	..	20
Collections. .. ..	..	20
Total ..		<hr/> 350 <hr/>

At the Practical Examination candidates must submit to the Examiner or Examiners their laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates.

Geology—Subsidiary.

	Hours.	Marks.
Written Examination Paper I— All divisions other than Mineralogy and Petrology ..	2	50
Written Examination Paper II— Mineralogy and Petrology ..	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

**Scheme of Examination—Gr. II—
Physiology.**

Physiology—Main.

	Hours.	Marks.
Written Examination Paper I ..	3	80
Written Examination Paper II ..	3	80
Practical Examination I ..	3	75
Practical Examination II ..	3	75
Laboratory note-books ..	..	40
Total ..		<u>350</u>

At the Practical Examination candidates must submit to the Examiner or Examiners their Laboratory note-books (duly certified by their Professors or Lecturers) as *bona fide* records of work done by the candidates.

Physiology—Subsidiary.

	Hours.	Marks.
Written Examination Paper I ..	2	50
Written Examination Paper II ..	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

Mechanical Engineering or Electrical Engineering
(to be taken as a Subsidiary subject to Physics).

Mechanical Engineering—Subsidiary.

Scheme of Examination—Gr ii—Mechanical Engineering.

The examination shall be both written and practical and the scheme of examination shall be as follows:—

	Hours.	Marks.
Written Examination Paper I—		
Machine Design	2	50
Written Examination Paper II—		
Heat Engines, Steam Engines, Fuels and Boilers, and Internal Combustion Engines	2	' 50
Practical Examination	3	50
Total		<hr/> 150 <hr/>

Electrical Engineering—Subsidiary.

Scheme of Examination—Gr ii—Electrical Engineering.

The examination shall be both written and practical and the scheme of examination shall be as follows:—

	Hours.	Marks.
Written Examination Paper I—		
Direct Current (<i>excluding Storage Batteries and Illumination</i>)	2	50
Written Examination Paper II—		
Alternating Current and Storage Batteries and Illumination	2	50
Practical Examination	3	50
Total		<hr/> 150 <hr/>

Group (iii-a)—Philosophy.

Scheme of Examination—Gr. iii-a—Philosophy.

The examination shall consist of five papers as follows:—

	Hours.	Marks.
1. Psychology ..	3	100
2. Ethics ..	3	100
3. European Logic ..	3	100
4. Indian Logic or An Indian Philosophical Classic ..	3	100
5. A European Philosophical Classic ..	3	100
Total ..	..	500

Group (iii-b)—Philosophy.

Scheme of Examination—Gr. iii-b—Philosophy.

The examination shall consist of five papers as follows:—

	Hours.	Marks.
1. Psychology ..	3	100
2. Ethics ..	3	100
3. Politics ..	3	100
4. Outlines of European History or Constitutional History of Great Britain and Ireland..	3	100
5. General Indian History ..	3	100
Total ..	..	500

Group (iv-a)—History and Economics.

Scheme of Examination—Gr. iv-a—History & Economics

There shall be five papers of three hours' duration each.

		Hours.	Marks.
1.	Politics ..	3	100
2.	General Indian History ..	3	100
3.	Constitutional History of Great Britain and Ireland	3	100
4.	Outlines of European History	3	100
5.	Economics—General ..	3	100
Total			500

Group (iv-b)—Economics and History.

Scheme of Examination—Gr. iv-b—Economics and History.

There shall be five papers of three hours' duration each as follows:—

		Hours.	Marks.
1.	Economics—General* ..	3	100
2.	Economics—Special ..	3	100
3.	Modern Economic History of England and India (from 1600 A.D.) ..	3	100
4. & 5.	Two out of the following:—		
	General Indian History*	3	100
	Politics ..	3	100
	Outlines of European History* ..	3	100
Total (of 5 papers)			500

*The question papers in the subjects shall be common to both Groups (iv-a) and (iv-b).

Group (v)—Languages other than English.

Scheme of Examination—Gr. V—Languages.

The examination shall consist of six papers of three hours' duration each.

The schemes of examination for the several languages are as follows:—

Sanskrit and Early Indian History.

	Hours.	Marks.
1. Books of the Early Period ..	3	80
2. Books of the Later Period I	3	80
3. Books of the Later Period II.	3	80
4. Grammar—Historical and • Comparative ..	3	80
5. History of Sanskrit Literature.	3	80
6. Cognate Subject—Early Indian History ..	3	100
Total ..		500

(i) *Urdu and Indian History (Muslim Period) or Arabic or Persian and* (ii) *Arabic or Persian and Early Muslim History.*

	Hours.	Marks.
Scheme of Examination—Gr. V—Languages—(contd.)		
1. Prose Books .	3	80
2. Poetry ..	3	80
3. Translation ..	3	80
4. Grammar including Rhetoric and Prosody	3	80
5. History of Language and Literature	3	80
6. Cognate Subject|Related Language—Indian History— Muslim Period or Arabic or Persian.		
Cognate Subject—Early Muslim History ..	3	100
Total ..		500

Tamil, or Telugu, or Kannada, or Malayalam, or Oriya, or Marathi and a Cognate Subject or Sanskrit.

		Hours.	Marks.
Scheme of Examination — Gr. V.— Languages—(contd).	1. Set Books and History of Literature I.	3	80
	2. Set Books and History of Literature II	3	80
	3. History of Language and Grammar	3	80
	4. Comparative Grammar— Dravidian or Gaurian ..	3	80
	5. Composition	3	80
	6. Cognate Subject— Early South Indian History. History of Orissa. History of the Marathas or Related Language—Sanskrit	3	100
	Total ..		<u>500</u>

Greek or Latin and Greek or Roman History.

		Hours.	Marks.
Scheme of Examination — Gr. V.— Languages—(contd.)	1. Set Books and History of Literature I.	3	80
	2. Set Books and History of Literature II	3	80
	3. Prose Composition	3	80
	4. Translation (from unprepared passages)	3	80
	5. Grammar	3	80
	6. Cognate Subject—Greek (Special Period) or Roman History	3	100
	Total ..		<u>500</u>

French or German and Modern European History.

		Hours.	Marks.
Scheme of Examination—Gr. V— Languages—(contd)	1. Set Books and History of Literature I.	3	80
	2. Set Books and History of Literature II	3	80
	3. History of Language	3	80
	4. Composition	3	80
	5. Translation	3	80
	6. Cognate Subject—Modern European History	3	100
	Total ..		500

Hebrew and History of the Jews.

		Hours.	Marks.
Scheme of Examination—Gr. V— Languages—(contd)	1. Set Books I..	3	80
	2. Set Books II.	3	80
	3. Translation ..	3	80
	4. Grammar	3	80
	5. History of Language and Literature	3	80
	6. Cognate Subject—History of the Jews	3	100
	Total ..		500

Group (v)—Syriac and History of the Syrians.

		Hours.	Marks.
Scheme of Examination—Gr. V— Syriac and History of the Syrians. .	1. Set Books I.	3	80
	2. Set Books II.	3	80
	3. Translation .	3	80
	4. Grammar	3	80
	5. History of Language and Literature	3	80
	6. Related Subject—History of the Syrians	3	100
	Total ..		500

Group (vi)—Indian Music.

Scheme of Examination—Gr. vi. — Indian Music The examination shall be as follows:—

	Hours.	Marks.
Theory Paper I	3	150
Theory Paper II	3	150
Practical Examination I ..	3	100
Practical Examination II ..	3	100
Total ..		500

Group (vii)—Geography.

Scheme of Examination — Gr. vii. —Geography. The examination shall be a written one and the scheme of examination shall be as follows:—

	Hours.	Marks.
1. Regional Geography, Paper I	3	100
2. Do. Paper II	3	100
3. Economic Geography ..	3	100
4. Physical Basis of Geography	3	100
5. Cartography	3	100
Total ..		500

Group (viii)—Islamic History and Culture.

Scheme of Examination—Gr. viii —Islamic History and Culture. There shall be five papers of three hours' duration each as follows:—

	Hours.	Marks
1. General History of Islam ..	3	100
2. Civilization and Culture of Islam	3	100
3. History of India with reference to the role of Islam ..	3	100
*4. Politics	3	100
*5. Economics	3	100
Total ..		500

* The question papers in the subjects shall be common to Groups (iv-a), (iv-b) and (viii).

Divisions in the subjects for Examinations.

4. The divisions of the examinations in the groups under Part III shall be as follows:—

Group (i-a)—Mathematics (1) Pure Mathematics, (2) Applied Mathematics.

„ *(i-b)—Mathematics* (1) Compulsory subjects, (2) Optional subjects.

„ *(ii)—Mathematics* (1) Main subject, (2) Subsidiary subject,
and

„ *(ii)—Other subjects* (1) The written examination in the main subject, (2) the practical examination in the main subject, (3) the examination in the subsidiary subject.

Group (iii-a)—Philosophy—(1) Psychology and Ethics, (2) European Logic, Indian Logic or Indian Philosophical Classic, and European Philosophical Classic.

„ *(iii-b)—Philosophy—*(1) Psychology and Ethics, (2) Politics and Histories.

Group (iv-a)—History and Economics (1) Indian, European and Constitutional Histories, (2) Economics and Politics.

„ *(iv-b)—Economics and History* (1) Economics, [the three papers—Economics (General), Economics (Special) and Economic History] (2) History|Politics (the two optional subjects).

„ *(v)—Languages other than English* (1) Selected Language, (2) Cognate Subject or Related Language.

„ *(vi)—Indian Music* (1) Theory, (2) Practical examination.

Group (vii)—Geography (1) Regional Geography and Economic Geography, (2) Physical Basis of Geography and Cartography.

(viii)—Islamic History and Culture (1) General History of Islam, Civilization and Culture of Islam and History of Islam in India; (2) Politics and Economics.

5. No candidate shall be eligible for the Degree of Bachelor of Arts until he has completed the course of study prescribed and passed the examination in the subjects contained in the course of study as detailed in Regulations 2 and 3 *supra*.

6. A candidate shall not be eligible for the Degree of Bachelor of Arts unless he has passed the examination in English (Part I), the examination in the selected second language under Part II, and the examination in the selected optional groups under Part III. A candidate who obtains not less than 35 per cent. of the marks in Part I shall be declared to have passed the Examination in Part I, candidate who obtains not less than 35 per cent. of the marks in the selected language in Part II shall be declared to have passed the examination in Part II, and a candidate who obtains not less than 35 per cent. of the total marks in the selected optional group in Part III and not less than 30 per cent. of the marks in each division of the examination in this Part, except in the case of Group (vi) Indian Music, shall be declared to have passed the examination in Part III.

In the case of Group (vi) Indian Music, a candidate who obtains not less than 35 per cent. of the total marks and not less than 35 per cent. in the practical examination and not less than 30 per cent. in the theory examination shall be declared to have passed the examination in Part III.

7. Successful candidates who obtain not less than 60

Classification of successful candidates. per cent. of the marks in any Part mentioned in Regulation 3 shall be placed in the first class in that Part.

Successful candidates who obtain less than 60 per cent. and not less than 50 per cent. of the marks in any Part shall be placed in the second class in that Part. All other successful candidates obtaining less than 50 per cent. of the marks in any Part shall be placed in the third class in that Part.

8. A candidate for the B.A. Degree Examination may

Candidates may present for the Examination in Parts—Payment of fees. at his option, present himself for the whole or for any Part or Parts of the examination at any one time. He should, however, pay the fee for the whole examination at his first appearance.

9. A person who has qualified for the B.A. Degree of this University shall be permitted to

B.A.s may qualify in an additional language in Part II—conditions.

present an additional language as a second language under Part II of the B.A. Degree Examination, provided that the Syndicate is satisfied that he has undergone the course of study prescribed in the language selected by attending a college for a period of not less than one academic year of 3 terms after qualifying for the degree.

A candidate coming under the provisions of this Regulation shall be declared to have passed the examination if he obtains not less than 35 per cent. of the marks.

10. A person who has qualified for the B.A. Degree of this University shall be permitted to

B.A.s may qualify in additional subjects in Part III.

appear for a different, optional group under Part III of the B.A. Degree examination, provided that the Syndicate is satisfied that he has undergone the course of study (both theoretical and practical) prescribed for the selected new group of optional subjects by attending a college for a period of not less than one academic year of 3 terms after qualifying for the degree.

In the case of Science subjects, the main subject offered for the subsequent examination shall be one different from the main subject in which he previously qualified for the degree. He shall be exempted from examination in the subsidiary subject, provided it was offered as his main or subsidiary subject on the occasion when he qualified for the degree.

A candidate coming under the provisions of this Regulation shall be declared to have passed the examination if he obtains not less than 35 per cent. of the marks in the aggregate, and not less than 30 per cent. in each division of the optional group in Part III.

The divisions for the different groups shall be the same as those prescribed in Regulation 4 *supra*, except in the case of the group for Science subjects where the candidate is exempted from the examination in the subsidiary subject. Where he is exempted from examination in the subsidiary subject, his aggregate marks shall comprise the marks in the main subject only.

11. Successful candidates under Regulations 9 and 10 shall be placed in a separate list. They shall not be eligible for prizes or medals awarded by the University.

Classification of successful candidates—under Regulations 9 & 10.

Such candidates shall not be admitted at a Convocation a second time, but a special Certificate setting forth the further subjects of the examination passed by them and the dates of such examination shall be given to them.

12. Candidates who have undergone the prescribed course of study for the Degree of Bachelor of Arts either under the Old Bye-laws or the Old Regulations in force prior to 1929-30, and are qualified to sit for the examination, shall be permitted to appear for the B.A. Degree examination under the existing Regulations without producing additional certificates of attendance in Parts or Groups corresponding to the Divisions or Groups of the Old Bye-laws or Old Regulations respectively. Such candidates shall appear for the three Parts of the examination,

Transitory provision—candidates studied prior to 1936-37.

provided that candidates who have passed in any Division or Divisions or a Part of the B.A. Degree Examination under either the Old Bye-laws or Old Regulations, as the case may be, shall be deemed to have passed in the corresponding Part or Parts under the existing Regulations, viz.,

Division I or Part I (English Language) corresponding to Part I.

Division II (Second Language) corresponding to Part II, and

Division III or Part II (Optional Group) corresponding to Part III.

Candidates may also be permitted to take any of the optional groups prescribed under Part III, and offered by college candidates, under the existing Regulations, subject to the proviso that the optional subject proposed to be taken does not require any practical course of laboratory training.

- Candidates desiring to appear under this Regulation shall obtain the previous permission of the Syndicate to sit for the examination by application made to the Registrar on or before the 1st November or 1st April preceding the March or September examination as the case may be. Permission once granted shall be permanent.

CHAPTER XLI.

Degree of Bachelor of Arts (Honours).

1. Candidates for the Examination of Bachelor of Arts (Honours) shall be required

either

A

(1) to have passed the Intermediate Examination in Arts and Science of this University and to have satisfied the requirements under (i) of (c) Part III of Regulation 3 of the Chapter XXXIX re Intermediate Examination in Arts and Science, or an examination

Conditions of Admission to B.A. (Hons) Degree Examination.

accepted by the Syndicate as equivalent thereto under conditions, if any, prescribed;

and (2) to have undergone subsequently a further course of study in a Constituent or an Affiliated college for a period of not less than three academic years or nine terms;

or

B

(1) to have qualified for the Degree of Bachelor of Arts or Science in this University or to have passed a Degree examination of some other University in India accepted by the Syndicate as equivalent thereto, under conditions, if any, prescribed;

and (2) to have undergone subsequently a further course of study in a Constituent or Affiliated college for a period of not less than two academic years or six terms.

2. The course shall comprise the study of—

Part I—Preliminary Examination.—English to be studied during the first year of the course.

Part II—Final Examination.—One of the following
Course of Study branches of knowledge to be studied
 during the course prescribed:—

- I. Mathematics.
- II. Philosophy.
- III. History.
- IV. Economics.
- V. Politics.
- VI. Two Languages other than English.
- VII. English Language and Literature.
- VIII. Sanskrit Language and Literature.
- IX. Arabic Language and Literature
- X. Syriac Language and Literature.
- XI. A Dravidian Language or Urdu and its Literature.
 (Tamil, Telugu, Malayalam, Kannada or Urdu).
- XII. Islamic History and Culture.

PART I.

English.

The course shall include—(a) in the case of candidates
Course of Study
—English.
other than those who have selected
 Branch VI—English Language and
 Literature—

- (1) The study in detail of certain prescribed books (Prose); and
- (2) the study of certain books prescribed for perusal.

(b) in the case of candidates who select Branch VI—
 English Language and Literature—

- (1) the study of the History of England treated in relation to the History of English Language and Literature, and
- (2) the study of certain books prescribed for perusal [as in (a) (2) above].

The books prescribed for perusal may include works of Fiction, Literary Criticism, Biography, History, Science or Philosophy.

PART II.

[*Note.*—Syllabuses for the subjects or text-books prescribed, if any, will be found in **Appendix IV.**]

I. Mathematics.

Course of Study
—Mathematics.
The course shall comprise the study
 of—

(a) Pure Mathematics:—

1. Pure Geometry including Projective Geometry.
2. Algebra and Theory of Equations.
3. Plane Trigonometry.
4. Differential and Integral Calculus including Reimann Integration, Cauchy's Theorem on Contour Integration and Fourier's Series.

-
5. Elementary Differential Equations.
 6. Co-ordinate Geometry of Two Dimensions.
 7. Solid Geometry—the Line, Plane, Sphere and Surfaces of the Second Degree.

(b) Applied Mathematics:—

1. Statics excluding the Theory of Potentials.
2. Dynamics of a Particle.
3. Dynamics of a Rigid Body—motion in two dimensions.
4. Hydrostatics.
5. Astronomy, General and Elementary Spherical.

and (c) Two subjects to be selected out of the following optional subjects, at least one of which shall be from numbers 1 to 5.

- | | | | |
|--------------------------------|----|----|--------------------|
| 1. Geometry | .. | .. | A special subject* |
| 2. Algebra | .. | .. | Do. |
| 3. General Theory of Functions | | | Do. |
| 4. Differential Equations | .. | | Do. |
| 5. Special Functions | .. | | Do. |
| 6. Dynamics | | .. | Do. |
| 7. The Potentials | | .. | Do. |
| 8. Elasticity | .. | .. | Do. |
| 9. Hydrodynamics and Sound | | | Do. |

A candidate shall give notice through his college, a year before the date of the examination, of the particular subjects he proposes to take.

*For the special subjects prescribed under each head, please see APPENDIX IV.

II. *Philosophy.*

Course of Study The course shall comprise the study
—Philosophy. of—

1. Psychology.

2. *Either* Theory of Knowledge *or* Ethics, provided that a candidate selecting Theory of Knowledge must have attended, and made satisfactory progress in course of instruction in Ethics equivalent to that required of candidates for the B.A. Degree, and that a candidate selecting Ethics must have attended and made satisfactory progress in a course of instruction in European Logic and Theory of Knowledge equivalent to that required of candidates for the B.A. Degree.

Course of Study 3. Outlines of Indian Philosophy.
—Philosophy.

4. European Philosophy from Descartes to Kant.

5. and 6. Two subjects both of which must be selected from *either* list A *or* from list B. (Candidates who select Theory of Knowledge in 2 above should select subjects from list A, and those who select Ethics should select subjects from list B).

List A.

(a) Indian Logic.

(b) One of the following :

i. Advaita Vedanta.

ii. Saiva Siddhanta.

iii. Dwaita.

iv. Visishtadwaita.

v. Sankhya.

vi. Buddhism.

vii. Jainism.

List B.

(a) Social and Abnormal Psychology.

(b) Child and Educational Psychology.

(c) Philosophy of Religion.

(d) Hindu Social Thought.

(e) A prescribed Period on
 School of Political
 Philosophy.

(f) Political Philosophy.

List A—contd.

- (c) Greek Philosophy.
- (d) Scholastic Philosophy.
- (e) Philosophy from Kant to Hegel.
- (f) A prescribed work dealing constructively with the general problems of Philosophy.

7. Essay.

A candidate shall give notice through his college, a year before the date of the examination, of the particular subjects he proposes to take.

III. History.

Course of Study The course shall comprise the study
—History. of—

- 1. The History of India.
- 2. Constitutional History of Great Britain and Ireland.
- 3. Politics.
- 4. Economics.
- 5. & 6. Special (optional) subjects. Any two subjects to be selected from a list prescribed from time to time, under the following main head*:
 - Politics.
 - History.
 - Indian History.
 - Economics.

7. Essay.

A candidate shall give notice through his college, a year before the date of the examination, of the particular subjects he proposes to take.

* For the special subjects prescribed under each head, please see APPENDIX IV.

IV. Economics.

Course of Study The course shall comprise the study
— **Economics.** of—

1. Economics I.
2. Economics II.
3. Economic History. A general survey of the development of industry, trade and agriculture in Great Britain and India chiefly from 1700 A.D. and in France, Germany, U.S.A. from 1850.
4. A special subject in Economics (to be selected
• from a list prescribed)* (Special Subject I).
5. & 6. Two out of the following three subjects—
 Politics.
 The History of India.
 A second special subject in Economics (to
 be selected from a list prescribed)*. (Special Subject II).
7. Essay.

A candidate shall give notice through his college a year before the date of the examination, of the particular subjects he proposes to take.

*Special subjects in Economics:—

- (1) Banking and Currency.
- (2) Public Finance.
- (3) Social Economics (including Labour Problems).
- (4) Rural Economics (including Co-operation)
- (5) Indian Land Tenures.

* For the special subjects prescribed under each head, please see APPENDIX IV.

V. *Politics.*

Course of study The course shall comprise the
—Politics. study of—

- (1) The Political Theory—The Theory of the State—with the critical study of a political classic to be prescribed from time to time.
- (2) History of Political Thought—with the study of the historical background of the general movements of political thought.
- (3) Political Institutions.
- (4) Economics (in common with Branch III Honours).
- (5) History of Administrative and Constitutional Development in India.
- (6) One of the following optionals:—
 - (a) Public Administration—Principles and Practice (with documents).
 - (b) A period or topic of British Indian Administration (with documents).
- (7) Essay (in common with Branches III and IV Honours).

A candidate shall give notice through his college a year before the date of the examination of the particular subject he proposes to take.

VI. *Two Languages other than English.*

Course of study The course in each language and the text-books prescribed shall be identical with those
—Two Languages prescribed for the same language when
other than Eng- offered as the selected language in
lish. Group (v)—Languages other than English—of the B.A. Degree course, the cognate subjects and related languages being excluded. There shall be an additional paper on Composition in each language.

In cases where there is already provision for a paper in Composition under Group (v) of the B.A. Degree course, the additional paper in Composition under Branch V

Honours shall have special reference to certain set books of an advanced character that may be prescribed from time to time by the respective Boards of Studies concerned.

A candidate shall give notice through his college, at least a year before the date of the examination, of the languages in which he proposes to appear.

VII. *English Language and Literature.*

Course of study The course shall comprise the study
—**English.** of—

(a) The History of English Language. Old and Middle English.

The History of the English Language shall include phonology, accidence and syntax, also Germanic Philology so far as it bears on the English Language. In Old and Middle English there shall be prescribed certain selected texts. Ability to translate passages from Old and Middle English texts not prescribed shall be tested.

(b) The History of English Literature; Shakespeare; Modern English.

A candidate shall be required to show a knowledge of the whole course of the History of English Literature. In Shakespeare a candidate shall, in addition to the detailed study of the prescribed plays, be required to show a general knowledge of Shakespeare's works and of Shakespearean criticism. In modern English, there shall be a number of set books in prose and poetry of the 15th, 16th, 17th, 18th and 19th centuries. A candidate shall be required to make a detailed study of the texts, marked with an asterisk and to show a general knowledge of the other prescribed texts.

(c) Special period or subject.

A candidate shall be required to offer for examination a special period or subject selected by him from the following list:—

1. Literature of the 14th and 15th centuries.
2. Elizabethan Literature (*i.e.*, 1558—1637).
3. The Age of Milton and Dryden.

4. The Age of Pope and Johnson.
5. Wordsworth and his contemporaries.
6. Tennyson and his contemporaries.

A candidate shall be required to show a knowledge of the writings of the chief authors of the period selected. He shall also be examined on certain set books of the period selected.

7. Indo-Germanic Philology with special reference to Sanskrit.

8. Indo-Germanic Philology with special reference to Gothic.

A candidate selecting (7) shall be examined in certain set books in Sanskrit. A candidate offering (8) shall be examined in select extracts of the literary remains of Gothic.

Books or groups of books set shall ordinarily continue to be the same for not less than five years. A candidate shall give notice through his college, at least a year before the date of the examination, of the books or groups of books, which he proposes to offer.

VIII. Sanskrit Language and Literature.

(1) Every candidate who presents himself for this Branch of the B.A. (Honours) Degree examination, shall be required to possess a sound knowledge of the principles of comparative philology and of the elements of comparative grammar with special reference to the important Indo-Germanic languages.

(2) The course of studies shall further consist of one part fitted to equip the student with a general knowledge of the Sanskrit Language and Literature, and also of another part fitted to enable him to acquire a special knowledge of any specified branch or branches of that literature as prescribed from time to time.

(3) The course in the general part shall comprise—

- (1) The History of the language;
- (2) The History of the literature in the language;

- (3) Grammar, Prosody and Poetics;
- (4) Prescribed text-books in poetry and prose, the selections being fairly representative of the various stages in the life of the Sanskrit language and literature;
- (5) Translation from Sanskrit into English and from English into Sanskrit.

4. The course in the special part shall comprise—

- (1) Prescribed text-books selected from any specified branch or branches of Sanskrit literature;
- (2) A critical and comparative enquiry into the contents and value of the specified branch or branches of the literature selected for study by the candidate.

IX. Arabic Language and Literature.

1. Every candidate, who presents himself for this Branch of the B.A. (Honours) Degree examination, shall be required to possess a sound knowledge of the principles of comparative philology and of the elements of comparative grammar with special reference to the important Semitic languages.

2. The course of study shall further consist of one part fitted to equip the student with a general knowledge of the Arabic language and literature, and also of another part fitted to enable him to acquire a special knowledge of any specified branch or branches of that literature as prescribed from time to time.

3. The course in the general part shall comprise —

- (1) The History of the language;
- (2) The History of the literature in the language;
- (3) Grammar, Prosody and Poetics;

- (4) Prescribed text-books in poetry and prose, the selections being fairly representative of the various stages in the life of the Arabic language and literature;
- (5) Translation from Arabic into English, and from English into Arabic.

4. The course in the special part shall comprise—

- (1) Prescribed text-books selected from any specified branch or branches of Arabic Literature;
- (2) A critical and comparative inquiry into the contents and value of the specified branch or branches of the literature selected for study by the candidate.

X. Syriac Language and Literature.

1. Every candidate, who presents himself for this Branch of the B.A. (Honours) Degree Examination, shall be required to possess a sound knowledge of the principles of Comparative Philology and of the elements of Comparative Grammar with special reference to the important Semitic languages.

2. The course of study shall further consist of one part to enable the student to obtain a general knowledge of the Syriac language and literature, and also of another part to enable him to acquire a special knowledge of any specified branch or branches of that literature as prescribed from time to time.

3. The course in the general part shall comprise—

- (1) The History of the Language;
- (2) The History of the Literature in the Language;
- (3) Grammar, Prosody and Poetics;
- (4) Prescribed text-books in Poetry and Prose, the selections being fairly representative of the various stages in the life of the Syriac Language and Literature;

Translation from Syriac into English, and from English into Syriac.

4. The course in the special part shall comprise—

- (1) Prescribed Text-books selected from any specified branch or branches of Syriac literature.
- (2) A critical and comparative inquiry into the contents and value of the specified branch or branches of the literature selected for study by the candidate.

XI. A Dravidian Language or Urdu and its Literature.

Course of Study— The course shall comprise the study
Dravidian Lan- of—
guage or Urdu

- (1) The History of the Language and Philology.
- (2) Prescribed text-books (General).
- (3) Prescribed text-books (Special)—either period or other Group.
- (4) Grammar, Prosody and Poetics.
- (5) The History of the Literature and Literary Criticism.
- (6) For all languages except Urdu, South Indian History and Inscriptions, and for Urdu—Arabic or Persian or Hindi.
- (7) Translation from English into the language.

XII. Islamic History and Culture.

Course of Study The course shall comprise the
—Islamic History study of :—
and Culture.

- (1) Advanced History of Islam.
- (2) Islamic Law and Constitution.
- (3) & (4) Two Special Subjects dealing with
 Periods of Islamic History to be studied
 along with original authorities.
- (5) Politics, }
- (6) Economics, } in common with Branch III.
- (7) Essay. }

Syllabuses and text-books, if any, in the above subjects, shall be prescribed from time to time.

The scheme of examination shall be as follows:--

Part I—Preliminary Examination.

English.

Scheme of Examination.

There shall be two written papers of three hours' duration each.

	Hours.	Marks.
1. English Prose or English History ..	3	100
2. English Composition ..	3	100
Total		200

Part II.—Final Examination.

Optional subjects.

The following shall be the scheme of examinations in the optional branches:—

I. Mathematics.

Three papers shall be set in Pure Mathematics, three in Applied Mathematics and one in each of the optional subjects selected. Each paper shall be of three hours' duration and shall contain questions on the principles developed in the ordinary treatment of the subject as well as exercises of moderate difficulty arising therefrom.

	Hours.	Marks.
1. Pure Mathematics I ..	3	175
2. Do. II ..	3	175
3. Do. III ..	3	175
4. Applied Mathematics I ..	3	175
5. Do. II ..	3	175
6. Do. III ..	3	175
7. Optional Subject I ..	3	175
8. Do. II ..	3	175
Total ..		1,400

II. Philosophy.

Scheme of Examination. There shall be a written examination of seven papers of 3 hours' duration each, and a *viva voce* test.

	Hours.	Marks.
1. Essay	3	200
2. Psychology	3	200
3. Theory of Knowledge or Ethics	3	200
4. Outlines of Indian Philosophy	3	200
5. European Philosophy—Descartes to Kant ..	3	200
6. Special Subject I	3	200
7. Special Subject II	3	200
Total ..		1,400

The *viva voce* test shall be held as soon as possible after the examiners have valued the written answers of the candidate. No fixed proportion of marks shall be assigned to it; its purpose is to assist the examiners in placing the candidates.

III. History, Economics and Politics.

Scheme of Examination. There shall be seven papers of 3 hours' duration each.

	Hours.	Marks.
1. Essay	3	200
2. The History of India ..	3	200
3. Constitutional History of Great Britain and Ireland	3	200
4. Politics—General ..	3	200
5. Economics—General (in common with Economics I in Branch IV)	3	200
6. Special Subject I	3	200
7. Special Subject II	3	200
Total ..		1,400

*IV. Economics.***Scheme of Examination.**

There shall be seven papers of 3 hours' duration each.

		Hours.	Marks.
1.	Essay	3	200
2.	Economics I (in common with Economics—General in Branch III)	3	200
3.	Economics II	3	200
4.	Economics—Special Subject	3	200
5.	Economic History ..	3	200
6. & 7.	Two out of the following:—		
(Optional)	{ The History of India* ..	3	200
	{ Politics—General* ..	3	200
	{ Economics—Second Special Subject	3	200
Total (of 7 papers) ..			1,400

Note :—Economics II will be set in two Parts. Part I—A comparative study of Modern Economic Theory with special reference to a prescribed classic. Part II—Advanced questions in the present organisation of Industry and Trade, including International Trade.

*V. Politics.***Scheme of Examination.**

There shall be seven papers of three hours' duration each.

		Hours.	Marks.
1.	Political Theory—The Theory of the State ..	3	200
2.	History of Political Thought..	3	200
3.	Political Institutions ..	3	200
†4.	Economics ..	3	200
5.	History of Administrative and Constitutional Development in India ..	3	200
6.	Optional Subject ..	3	200
†7.	Essay ..	3	200
Total ..			1,400

* The papers shall be the same as for Branch III.

† The question papers shall be the same as for Branches III and IV.

VI. *Two languages other than English.*

The examination shall be identical with that prescribed for the same language when offered as the selected language in Group (v)—Languages other than English—of the B.A. Degree course, the cognate subjects and related languages being excluded, provided that in the examination in each language in Branch V Honours there shall be an additional paper of three hours' duration in Composition (carrying a maximum of 100 marks), and provided that a candidate for the B.A. (Honours) Degree in Branch V who has passed the B.A. Degree examination of this University in Group (v) shall be exempted from examination, in the selected language of the B.A. Degree examination, except in respect of the additional paper in Composition specially prescribed for Branch V in this Regulation, and he shall be credited with the percentage of marks which he obtained in that language in the B.A. Degree examination.

The time-tables for the examinations in the language will be identical with the time-tables detailed under Group (v) of the B.A. Degree course with the word 'Composition' (or Additional Paper in Composition) substituted in the place of the Cognate Subject or Related Language detailed thereunder. Candidates for Honours will each be required to answer the papers set for the B.A. Degree examination in the language selected for Honours. The examination in Part III of Group (v) for the B.A. Degree and Branch V for the B.A. (Honours) Degree shall commence on or after the Monday following the fourth Monday in March.

VII. *English Language and Literature.*

There shall be both a written and *viva voce* examination. The written examination shall consist of three divisions. There shall be three papers in division (a), five

papers in division (b) and two papers in division (c), as follows:—

	Hours.	Marks
1. History of the English Language	3	150
2. Shakespeare	3	175
3. Modern English Literature—		
Paper I ..	3	125
4. Do. Paper II ..	3	125
5. Do. Part III ..	3	125
6. Beowulf and other old English texts	3	150
7. Chaucer and other Middle English texts ..	3	150
8. Essay	3	100
9. Special Period—Paper I ..	3	150
10. Special Period—Paper II ..	3	150
Total ..		<u>1,400</u>

The *viva voce* examination shall be held as soon as possible after the examiners have valued the written answers of the candidates. No fixed proportion of marks shall be assigned to it. Its purpose is to assist the examiners in placing the candidates.

VIII. Sanskrit Language and Literature.

1. There shall be a paper on the principles of Comparative Philology and the elements of Indo-Germanic Comparative Grammar.

2. In addition to this there shall be in the general part:—

(1) One paper on the history of the Sanskrit Language and Literature;

(2) One paper on Grammar, Prosody and Poetics;

- (3) One paper on the prescribed text-books, in which also there shall be questions on the grammar, structure and idiom of the language;
- (4) One paper on translation from as well as into Sanskrit, the passages given for translation not being taken from any of the prescribed text-books;

and in the special part there shall be—

- (1) Three papers on the prescribed text-books;
- (2) An essay in English on a subject intimately related to the specified branch or branches of Sanskrit literature from which the text-books of the special part are prescribed.

Scheme of Examination.

The scheme of examination shall be as follows:—

		Hours.	Marks.
(1)	Comparative Philology and Comparative Grammar ..	3	200
(2)	History of the Sanskrit Language and Literature ..	3	150
(3)	Prescribed text-books—General	3	150
(4)	Grammar, Prosody and Poetics	3	150
(5)	Translation	3	150
(6)	Prescribed text-books—		
	Special I ..	3	150
(7)	Do. Special II ..	3	150
(8)	Do. Special III ..	3	150
(9)	Essay	3	150
Total ..			<u>1,400</u>

IX. Arabic Language and Literature.

1. There shall be a paper on the principles of Comparative Philology and the elements of Semitic Comparative Grammar.

2. In addition to this there shall be in the general part—

- (1) One paper on the history of the Arabic Language and Literature;
- (2) One paper on Grammar, Prosody and Poetics;
- (3) One paper on the prescribed text-books in which also there shall be questions on the grammar, structure and idiom of the language;
- (4) One paper on translation from as well as into Arabic, the passage given for translation not being taken from any of the prescribed text-books;

and in the special part there shall be—

- (1) Three papers on the prescribed text-books;
- (2) An essay in English on a subject intimately related to the specified branch or branches of Arabic literature from which the text-books of the special part are prescribed.

The scheme of examination shall be as follows:—

		Hours.	Marks
1.	Comparative Philology and Comparative Grammar ..	3	200
2.	History of the Arabic Language and Literature .	3	150
3.	Prescribed text-books—		
	General ..	3	150
4.	Do. Special I ..	3	150
5.	Do. Special II ..	3	150
6.	Do. Special III ..	3	150
7.	Grammar, Prosody and Poetics	3	150
8.	Translation	3	150
9.	Essay	3	150
Total ..			1,400

X. Syriac Language and Literature.

1. There shall be a paper on the principles of **Scheme of Examination.** Comparative Philology and the elements of Semitic Comparative Grammar.

2. In addition to this, there shall be in the general part—

- (1) One paper on the History of the Syriac Language and Literature;
- (2) One paper on Grammar, Prosody and Poetics;
- (3) One paper on the prescribed text-books in which also there shall be questions on the grammar, structure and idiom of the language;
- (4) One paper on translation from as well as into Syriac, the passage given for translation not being taken from any of the prescribed text-books;

and in the special part there shall be—

- (1) Three papers on the prescribed text-books;
- (2) An essay in English on a subject intimately related to the specified branch or branches of Syriac Literature from which the text-books of the special part are prescribed.

The scheme of examination shall be as follows:—

	Hours.	Marks.
1. Comparative Philology and Comparative Grammar ..	3	200
2. History of the Syriac Language and Literature ..	3	150
3. Prescribed text-books—General.	3	150
4. Prescribed text-books—Special I ..	3	150
5. Prescribed text-books—Special II ..	3	150
6. Prescribed text-books—Special III ..	3	150
7. Grammar, Prosody and Politics.	3	150
8. Translation ..	3	150
9. Essay ..	3	150
Total ..		1,400

XI. A Dravidian Language or Urdu and its Literature.

Scheme of Examination. Candidates shall be examined in the following subjects and there shall be eight papers as follows:—

	Hours.	Marks.
1. Essay	3	200
2. The History of the Language and Philology ..	3	200
3. Prescribed text-books—General	3	150
4. Prescribed text-books—Special (either period or group) ..	3	150
5. Grammar, Prosody and Poetics	3	150
6. History of Literature and Literary Criticism ..	3	200
7. For all languages except Urdu, South Indian History and Inscriptions, and for Urdu—Arabic, Persian or Hindi	3	200
8. Translation from English into the language	3	150
Total ..		1,400

XII. Islamic History and Culture.

Scheme of Examination. There shall be seven papers of three hours' duration each:—

	Hours.	Marks.
1. Advanced History of Islam ..	3	200
2. Islamic Law and Constitution.	3	200
3. Special Subject I ..	3	200
4. „ II ..	3	200
*5. Politics ..	3	200
*6. Economics ..	3	200
7. Essay ..	3	200
Total ..		1,400

*These papers shall be the same as for Branches III and IV.

4. A candidate for the B.A. (Honours) Degree who has passed the B.A. (Pass) Degree examination of this University or who has passed a degree examination of some other University recognised as equivalent thereto shall be exempted from passing in the Preliminary Examination in Part I—English.

5. A candidate who has qualified for the Degree of Bachelor of Science with Mathematics as main subject shall be permitted to appear for the B.A. (Honours) Degree examination in Branch I—Mathematics after a two years' course in a Constituent or an Affiliated college. He shall be exempted from Examination in the Preliminary Examination in Part I—English.

6. No candidate shall be permitted to undergo the complete Final Examination in Honours more than once. A candidate for the Final Examination shall be permitted to withdraw from the examination, provided he has not sat for the last paper in the examination, and provided he has given notice of withdrawal to the Registrar within three clear days from the date of the last paper which he answered. He shall be permitted to appear again for the Final Examination in the following year without producing any additional certificate of attendance.

7. A candidate for the B.A. (Honours) Degree shall be required to appear for the Final Examination in Honours—

(1) not later than the end of the fourth year after commencing the Honours Degree course in a college.

or

(2) in the case of a Bachelor of Arts or Science proceeding to the Honours Degree examination, not later than three years after commencing the Honours Degree course in a college.

8. The Preliminary Examination, Part I—English Admission, to shall be held for candidates taking the Preliminary (Part I) three years' course in Honours, as Examination prescribed in Regulation 1-A.

No candidate shall be admitted to the examination unless he has satisfied the condition prescribed in Regulation 1-A (1) and has undergone the prescribed course of study.

9. No candidate other than a candidate exempted Exemption in under the provisions of Regulations 4 Part I Examination and 5 shall be admitted to the Final examination (Part II) in Honours unless he has passed the Preliminary Examination (Part I)—English.

10. No candidate shall be eligible for the B.A. Admission to (Honours) Degree until he has passed Final (Part II) the Preliminary Examination, Part I—Examination. English—(unless otherwise exempted), and in the Final Examination (Part II) in one of the branches of knowledge as prescribed.

11. *Part I, English—Preliminary Examination.*—Marks qualifying for a Pass in Part I. A candidate who secures not less than 40 per cent. of the aggregate marks in the two papers in English shall be declared to have passed the examination in Part I.

A candidate who secures not less than 60 per cent. of the aggregate marks shall be declared to have passed the examination with distinction.

12. *Part II—Final Examination.*—A candidate shall be declared to have passed the examination in one of the branches of knowledge for the B.A. (Honours) Degree if he obtains not less than 40 per cent. of the total marks and not less than 30 per cent. in each division of the examination, provided that the passing minimum in each division of the examination in Branch V—Two languages other than

English—shall be as specified hereunder. All other candidates shall be deemed to have failed in the examination for Honours. The divisions shall be as follows:—

Divisions of subjects.	<i>Branch I</i> —(a) Pure Mathematics, (b) Applied Mathematics, (c) Optional subjects.
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Branch II.—(a) i. Psychology; ii. Theory of Knowledge or Ethics, (b) i. Outlines of Indian Philosophy; ii. European Philosophy, (c) i. Special subjects; ii. Essay.

Branch III.—(a) Indian History and Constitutional History, (b) Politics and Economics, (c) Special subjects.

Branch IV.—(a) Economics I and II, (b) Economic History and Special subject, (c) Optional subjects.

(*Note.*—No special minimum is prescribed for the Essay paper in Branches III and IV.)

Branch V.—(a) Political Theory, History of Political Thought, and Political Institutions; (b) Economics and History of Administrative and Constitutional Development in India; (c) Optional subject.

Note.—No special minimum is prescribed for the Essay paper.

Branch VI.—(a) All the five papers in the first language, excluding the additional paper in Composition.

(b) The additional paper in Composition in the first language.

(c) All the five papers in the second language, excluding the additional paper in Composition.

(d) The additional paper in Composition in the second language

The passing minimum in the additional paper in Composition in an Indian Language shall be 40 per cent. and the passing minimum in each of the other divisions shall be 35 per cent.

Branch VII.—(a) English language, (b) English Literature and Essay and (c) Special period or subject.

Branches VIII, IX and X.—(a) Comparative Philology and Comparative Grammar, (b) General Part, (c) Special Part and Essay.

Branch XI.—(a) History of Language and Philology, and History of Literature and Literary Criticism, (b) Prescribed text-books (General and Special), and Grammar, Prosody and Poëtics, (c) Essay, Translation from English into the language and South Indian History and Inscriptions (in the case of Dravidian Languages) or Arabic, or Persian, or Hindi (in the case of Urdu).

Branch XII.—(a) Advanced History of Islam and Islamic Law and Constitution; (b) Politics and Economics; (c) Special Subjects.

Note.—No special minimum is prescribed for the Essay paper.

13. Successful candidates in the examination shall be ranked in the order of proficiency as determined by the total marks obtained by each and shall be arranged in three classes:—

Candidates who obtain not less than sixty per cent. of the aggregate marks shall be placed in the first class; those who obtain less than sixty per cent. but not less than fifty per cent. shall be placed in the second class; and all the other successful candidates shall be placed in the third class.

14. In the event of a candidate for the B.A. (Honours) Degree failing to satisfy the examiners he may be recommended by them for the B.A. Degree, provided that he obtains not less than $33\frac{1}{3}$ per cent. of the total marks and not less than 25 per cent. in each division of the examination.

15. (a) A candidate not already eligible for the B.A. Degree, who, having failed completely in the B.A. (Honours) Degree examination, desires to appear for the B.A. Degree examination shall be allowed to do so without the production of a further certificate of attendance in an Affiliated or a Constituent college.

• (b) A candidate not already eligible for the B.A. Degree who, after being registered, presents himself for the B.A. (Honours) Degree examination in any year and withdraws from the same and is prevented, through illness or otherwise, from subsequently presenting himself for examination within the period prescribed under Regulation (7) (1) of this Chapter, shall be allowed to appear for the B.A. Degree examination without the production of a further certificate of attendance in an Affiliated or a Constituent college.

Candidates appearing under this Regulation for the B.A. Degree Examination shall appear for all the Parts of the Examination and shall take under Part III the same optional subject which they studied for the Honours course, except in the case of candidates who took English Language and Literature for the B.A. (Honours) Degree, who may be permitted to take any optional group other than Group (ii) in the B.A. Degree Examination.

CHAPTER XLII.

M.A. Degree Examination.

(1) A candidate who has qualified for the B.A. (Honours) Degree of this University by passing the prescribed examination under the Regulations may, without further examination but upon payment

**B. A. (Hons.)—
when to take M.A.
Degree.**

of the prescribed fee, proceed to take the M.A. Degree of this University at any Convocation subsequent to his taking the B.A. (Honours) Degree.

(2) A candidate who has passed the B.A. Degree Examination of this University or an Examination of some other University accepted by the Syndicate as equivalent thereto, shall be permitted to appear for the M.A. Degree Examination of this University after a further course of two academic years in a Constituent or an Affiliated college of this University. The courses of studies syllabuses, subjects for the examination, scheme of marks and time-tables, marks qualifying for a pass and divisions of the subjects for the M.A. Degree examination shall be the same in all Branches as for the Final Examination for the B.A. (Honours) Degree conducted in the year in the subjects in the corresponding Branch.

He shall be exempted from passing the B.A. (Honours) Preliminary Examination—Part I.—English.

CHAPTER XLIII.

Degree of Master of Letters.

1. A candidate may present himself for the Degree of Master of Letters (M.Litt.) under the following conditions:—

Bachelor of Arts.—(a) Four years after having qualified for the Degree of B.A. of this University or the degree of any other University accepted by the Syndicate as equivalent thereto, and not earlier than four years from the date of approval of registration by the Syndicate for the purpose of pursuing research in accordance with the conditions laid down in Regulation 2 *infra*.

Eligibility to appear

Bachelor of Arts (Honours); Master of Arts and Licentiate in Teaching.—(b) Two years after having qualified for the B.A. (Honours) or M.A. or L.T. Degrees of this University or the degree of any other University

accepted by the Syndicate as equivalent thereto and not earlier than two years from the date of registration of approval by the Syndicate for the purpose of pursuing research in accordance with the conditions laid down in Regulation 2 *infra*.

2. A candidate for the degree shall apply to the Registrar to be registered as a candidate, stating in his application for registration:—

- | | |
|--|---|
| Registration before application | (a) his qualifications and attainments and previous study and research, if any; |
| | (b) the special subjects in which he intends to prosecute research; and |
| | (c) the name of the Teacher of this University or of an Institution recognised by or affiliated to the University under whose supervision and guidance he proposes to work; accompanied by the written consent of the Teacher, agreeing to supervise his work and in the case of a candidate proposing to do work in an Institution, from the Head of the Institution permitting him to work. |

3. Every such application shall be considered by the Syndicate and if approved, the candidate shall be registered as a candidate for the degree.

4. After the expiration of the period of post-graduate study and research work, every candidate shall submit with his application for the Degree four copies of the thesis, printed or typewritten, embodying the results of the research carried out by him, together with the prescribed fee.

The candidate shall also submit with his application and thesis a certificate from the Supervisor under whom he worked that the thesis submitted is a record of research work done by the candidate during the period of study under him, and that the thesis has not previously formed the basis for the award to the candidate of any Degree, Diploma, Associateship, Fellowship or other similar title;

together with a statement from the Supervisor indicating the extent to which the thesis represents independent work on the part of the candidate.

5. The application for the Degree and the thesis must be forwarded so as to be received by the Registrar on any day in the month of March or October and after completion of the research work in accordance with the conditions laid down in Regulation 2 *supra*.

A candidate may also forward, as supplementary papers to his thesis, printed copies of any contribution or contributions to the knowledge of his subject or any cognate branch he may have published.

6. The thesis shall be referred by the Syndicate for report to a Board of three Examiners; at the discretion of the Board of Examiners the candidate may be asked to submit to a written examination of one or two papers on matters related to the subject of his research, or to an oral examination, or to both; and on receipt of the said report, the Syndicate shall decide whether the candidate has qualified for the Degree or not. Its decision shall be published in the *Fort St. George Gazette*.

7. The thesis whether approved or not may not be published without the sanction of the Syndicate, and the Syndicate shall grant permission for the publication under such conditions as it may impose.

8. Notwithstanding the provisions in Regulation 1, in the case of candidates for the M.Litt. Degree, who register before March 31, 1938, and who prior to registration have been doing work under a supervisor approved by the Syndicate, it shall be competent for the Syndicate to reduce by the period of such work, the time that must elapse between registration and submission of the Thesis for the Degree.

CHAPTER XLIV—(Regulations).

Degree of Doctor of Letters.

1. A candidate may present himself for the Degree of Doctor of Letters (D.Litt.) under the following conditions:—

Bachelor of Arts (Honours) and Master of Arts.—

Eligibility to appear. (a) Five years after having qualified for the Degree of B.A. (Honours) or M.A. Degree of this University or the Degree of any other University accepted by the Syndicate as equivalent thereto.

Master of Letters.—(b) Three years after having qualified for the M.Litt. Degree of this University or a Degree of any other University accepted by the Syndicate as equivalent thereto.

2. The candidate shall state in his application the special subject within the purview of the Regulations pertaining to his previous qualifying degree, upon a knowledge of which he rests his qualification for the Doctorate, and shall with his application submit four copies of his thesis or published memoir of work done by him, which shall be an original contribution to learning of distinguished merit.

3. The thesis or memoir of work shall be accompanied by a declaration signed by the candidate that it has been composed by himself and a certificate that the thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar title.

4. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall also state whether his

research has been conducted independently, or in co-operation with others and in what respect his investigations appear to him to tend to the advancement of knowledge or otherwise form a valuable contribution to the literature of the subject dealt with.

The application and the thesis must be forwarded with the prescribed fee so as to reach the Registrar on any day in the month of March or October, and after the lapse of the period mentioned in Regulation 1 *supra*.

5. The candidate may with the thesis forward printed copies of any original contribution or contributions to the knowledge of his subject or of any cognate subject which may have been published by him independently or conjointly and upon which he relies in support of his candidature.

6. The thesis together with any other contributions and papers submitted shall be referred by the Syndicate for report to a Board of three Examiners.

7. The Board shall report to the Syndicate the result of the examination of the thesis and of the oral examination, if any; and on receipt of the said report, the Syndicate shall decide whether the candidate has qualified for the Degree or not. Its decision shall be published in the *Fort St. George Gazette*.

8. Successful candidates shall publish their theses before the award of the Doctorate Degree at a Convocation and shall inscribe it "Thesis approved for the Degree of Doctor of Letters in the University of Madras." Other candidates shall be at liberty to publish their thesis, but not under the name of the University.

CHAPTER XLV.

Degree of Bachelor of Science (Pass).

1. Candidates for the B.Sc. Degree examination shall be required to have passed the Intermediate Examination in Arts and Science of this University, and to have satisfied the requirements under (i) of (c) Part III of Regulation 3 of the Chapter *re* the Intermediate Examination in Arts and Science as prescribed, or an examination accepted by the Syndicate as equivalent thereto under conditions, if any, prescribed and have subsequently undergone a prescribed course of study in a constituent or an affiliated college for a period of not less than two academic years or six terms.

2. The course for the B.Sc. Degree shall comprise the following subjects, according to syllabuses to be prescribed from time to time.

Part I—Language Course.

The course shall last for a period of one academic year.

Course of Study—Part I Any one of the following languages, at the option of the candidate:—

- | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|--|--|-------------|-----------|----------|--------------|--------------|------------|--|----------|------------|-----------|--------|--------------|--------|------------|----------|---------|------------|
| (i) English | | | | | | | | | | | | | | | | | | | | |
| (ii) Classical | ... | ... | <table border="0"> <tr> <td>{ Sanskrit,</td> <td>Arabic.</td> </tr> <tr> <td>{ Greek.</td> <td>Persian.</td> </tr> <tr> <td>{ Latin.</td> <td>Hebrew.</td> </tr> <tr> <td>{</td> <td>Syriac.</td> </tr> </table> | { Sanskrit, | Arabic. | { Greek. | Persian. | { Latin. | Hebrew. | { | Syriac. | | | | | | | | | |
| { Sanskrit, | Arabic. | | | | | | | | | | | | | | | | | | | |
| { Greek. | Persian. | | | | | | | | | | | | | | | | | | | |
| { Latin. | Hebrew. | | | | | | | | | | | | | | | | | | | |
| { | Syriac. | | | | | | | | | | | | | | | | | | | |
| (iii) Modern | <table border="0"> <tr> <td>{ (a) Foreign.</td> <td>French.</td> <td>German.</td> </tr> <tr> <td>{</td> <td></td> <td></td> </tr> <tr> <td>{ (b) Indian</td> <td>...</td> <td> <table border="0"> <tr> <td>{ Tamil.</td> <td>Marathi.</td> </tr> <tr> <td>{ Telugu.</td> <td>Oriya.</td> </tr> <tr> <td>{ Malayalam.</td> <td>Hindi.</td> </tr> <tr> <td>{ Kannada.</td> <td>Burmese.</td> </tr> <tr> <td>{ Urdu.</td> <td>Sinhalese.</td> </tr> </table> </td> </tr> </table> | { (a) Foreign. | French. | German. | { | | | { (b) Indian | ... | <table border="0"> <tr> <td>{ Tamil.</td> <td>Marathi.</td> </tr> <tr> <td>{ Telugu.</td> <td>Oriya.</td> </tr> <tr> <td>{ Malayalam.</td> <td>Hindi.</td> </tr> <tr> <td>{ Kannada.</td> <td>Burmese.</td> </tr> <tr> <td>{ Urdu.</td> <td>Sinhalese.</td> </tr> </table> | { Tamil. | Marathi. | { Telugu. | Oriya. | { Malayalam. | Hindi. | { Kannada. | Burmese. | { Urdu. | Sinhalese. |
| { (a) Foreign. | French. | German. | | | | | | | | | | | | | | | | | | |
| { | | | | | | | | | | | | | | | | | | | | |
| { (b) Indian | ... | <table border="0"> <tr> <td>{ Tamil.</td> <td>Marathi.</td> </tr> <tr> <td>{ Telugu.</td> <td>Oriya.</td> </tr> <tr> <td>{ Malayalam.</td> <td>Hindi.</td> </tr> <tr> <td>{ Kannada.</td> <td>Burmese.</td> </tr> <tr> <td>{ Urdu.</td> <td>Sinhalese.</td> </tr> </table> | { Tamil. | Marathi. | { Telugu. | Oriya. | { Malayalam. | Hindi. | { Kannada. | Burmese. | { Urdu. | Sinhalese. | | | | | | | | |
| { Tamil. | Marathi. | | | | | | | | | | | | | | | | | | | |
| { Telugu. | Oriya. | | | | | | | | | | | | | | | | | | | |
| { Malayalam. | Hindi. | | | | | | | | | | | | | | | | | | | |
| { Kannada. | Burmese. | | | | | | | | | | | | | | | | | | | |
| { Urdu. | Sinhalese. | | | | | | | | | | | | | | | | | | | |

English.—The course shall be : (1) Composition on matter supplied by books set for perusal ; and (2) the study in detail of certain prescribed books in Modern Prose.

Indian Languages.—The course shall be: (1) Translation from the selected language into English and *vice versa*; and (2) Composition on matter supplied by books set for non-detailed study.

Other Languages --The course shall be: (1) Translation from the selected language into English and *vice versa*; and (2) Prescribed text-books.

Part II.

Course of study— The course shall last for a period of two academic years.
Part II—optional subjects.

Any three of the following branches of knowledge, one of which shall be taken as the main subject and the other two as subsidiary subjects:—

Mathematics.

Physics.

Chemistry.

Botany.

Zoology.

Geology.

*Physiology.

Mechanical Engineering.

Electrical Engineering.

provided that Mechanical Engineering and Electrical Engineering shall be taken only as subsidiary subjects and with Physics as the main subject.

The course of study in the main subjects (*see Regulation 3 infra* for scheme of examination) shall be according to syllabuses to be prescribed from time to time

*From 1939 Examinations.

The course of studies in the several subjects for the subsidiary standard shall be the same as for the B.A. Degree Examination.

On the first day of the practical examination in the main subject candidates must submit the laboratory note-books containing the drawings and other records relating to all the practical work performed by them during the period of study for the examination duly certified by the Professor or Lecturer as a *bona fide* record of work done by the candidates.

Candidates for examination in Botany shall submit in addition to their laboratory note-books their collection of plants and candidates for examination in Geology shall submit their field notes in addition to their geological collections.

Scheme of Examination — Part I. 3. The scheme of examination shall be as follows:—

Part I—Language.

English.—The examination shall consist of two papers:—

	Hours.	Marks.
1. English Prose ..	3	100
2. English Composition ..	3	100
Total ..		200

Classical and Modern (Foreign) Languages.—The examination shall consist of two papers:—

	Hours.	Marks.
1. Translation ..	3	100
2. Prescribed text-books ..	3	100
Total ..		200

Modern (Indian) Languages.—The examination shall consist of two papers:—

			Hours.	Marks.
1.	Translation	.. ..	3	100
2.	Composition	.. ..	3	100
Total ..				<hr/> 200 <hr/>

Part II

Mathematics—Main.

The examination shall be a written one and shall consist of the following papers:—

			Hours.	Marks.
1.	Algebra and Trigonometry	.. ..	3	100
2.	Geometry	.. ..	3	100
3.	Calculus	.. ..	3	100
4.	Dynamics	.. ..	3	100
Total ..				<hr/> 400 <hr/>

Mathematics—Subsidiary.

The examination shall be a written one and shall consist of the following papers:—

			Hours.	Marks.
1.	Paper I (Algebra and Calculus)		3	75
2.	Paper II (Trigonometry and Analytical Geometry)	.. ..	3	75
Total ..				<hr/> 150 <hr/>

Physics—Main.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Dynamics and Hydrostatics	3	70
2. Properties of Matter and Heat.	3	70
3. Light and Sound ..	3	70
4. Electricity and Magnetism ..	3	70
Practical Examination ..	6	100
Laboratory note-books ..	..	20
Total ..		<hr/> 400 <hr/>

Physics—Subsidiary

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Hydrostatics, Properties of Matter and Heat ..	2	50
2. Light, Electricity and Magnetism.	2	50
Practical Examination ..	3	50
Total ..		<hr/> 150 <hr/>

Chemistry—Main.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. General Chemistry ..	3	80
2. Inorganic Chemistry ..	3	80
3. Organic Chemistry ..	3	100
Practical Examination (Organic)	3	40
Do. (Inorganic)	6	80
Laboratory note-books ..	..	20
Total ..		<hr/> 400 <hr/>

Chemistry—Subsidiary.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. General and Inorganic Chemistry	3	60
2. Organic Chemistry ..	2	40
Practical Examination ..	3	50
Total ..		150

Botany—Main.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—Thallophytes, Bryophytes, Pteridophytes, Gymnosperms and His- tology	3	100
2. Written Examination— Paper II—Morphology and Taxonomy of Angiosperms, Plant Physiology and Gene- ral principles	3	100
Practical Examination I ..	3	70
Do. II ..	3	70
Laboratory note-books ..	..	40
Collection of plants ..	..	20
Total ..		400

Botany—Subsidiary

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—Thallophytes, Bryophytes, Pteridophytes, Gymnosperms and His- tology	2	50
2. Written Examination— Paper II—Morphology and Taxonomy of Angiosperms, Plant Physiology and Gene- ral principles	2	50
Practical Examination ..	3	50
Total ..		<hr/> 150 <hr/>

Zoology—Main.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—(Invertebrata).	3	120
2. Written Examination— Paper II—(Chordata) ..	3	120
Practical Examination I ..	3	60
Do. II ..	3	60
Laboratory note-books ..	..	40
Total ..		<hr/> 400 <hr/>

Zoology—Subsidiary.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—(Invertebrata) ..	2	50
2. Written Examination— Paper II—(Chordata) ..	2	50
Practical Examination ..	3	50
		<hr/>
Total ..		150
		<hr/>

Geology—Main.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—All divisions other than Mineralogy and Petrology	3	100
2. Written Examination— Paper II—Mineralogy and Petrology	3	100
Practical Examination—Paper I	3	75
Do. —Paper II	3	75
Laboratory note-books		25
Collection and field work notes..		25
		<hr/>
Total ..		400
		<hr/>

Geology—Subsidiary.

The examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
1. Written Examination— Paper I—All divisions other than Mineralogy and Petrology	2	50
2. Written Examination— Paper II—Mineralogy and Petrology	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

**Physiology Main.*

The Examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
Written Examination—Paper I.	3	120
Do. „ II.	3	120
Practical Examination— „ I.	3	60
Do. „ II.	3	60
Laboratory note-books ..		40
Total ..		<u>400</u>

**Physiology Subsidiary.*

The Examination shall be both written and practical, and shall consist of the following papers:—

	Hours.	Marks.
Written Examination—Paper I.	2	50
Do. „ II.	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

Mechanical Engineering—Subsidiary.

The examination shall be both written and practical and shall consist of the following papers:—

	Hours.	Marks
1. Written Examination— Paper I Machine Design ..	2	50
2. Written Examination— Paper II—Heat Engines, Steam Engines, Fuels and Boilers and Internal Com- bustion Engines ..	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

Electrical Engineering—Subsidiary.

	Hours.	Marks.
1. Paper I—Direct Current (ex- cluding Storage Batteries and Illumination) ..	2	50
2. Paper II—Alternating Cur- rent and Storage Batteries and Illumination ..	2	50
Practical Examination ..	3	50
Total ..		<u>150</u>

4. No candidate shall be eligible for the Degree of Bachelor of Science until he has completed the course of study prescribed and has passed the examination in the subjects prescribed for the course in Regulations 2 and 3 *supra*.

5. A candidate for the B.Sc. Degree examination may present himself for Part I at the end of the first year of the course and thereafter may at his option present himself for the whole or for either Part at any one time.

Eligibility to Degree—when.
Part I Examination may be taken in first year.

6. A candidate shall be declared to have passed Part I of the examination if he obtains not less than 40 per cent. of the total number of marks. A candidate shall be declared to have passed Part II of the examination if he obtains not less than (1) 30 per cent. in each of the two subsidiary subjects, (2) except in the case of Mathematics, 30 per cent. in each of the divisions of the main subject (a) written examination, and (b) practical examination; (3) 35 per cent. in the total for the main subject and (4) 35 per cent. of the grand total (main and subsidiary subjects). All other candidates shall be deemed to have failed in the examination.

7. There shall be separate lists of the successful candidates in each part. Candidates obtaining not less than 60 per cent. of the total marks in Part I shall be declared to have passed with distinction in the language taken under Part I.

In Part II, candidates who obtain not less than 60 per cent. of the total marks shall be placed in the first class, those who obtain less than 60 per cent., but not less than 50 per cent. of the total marks shall be placed in the second class and all other successful candidates shall be placed in the third class.

8. Nothing in these Regulations shall prevent a candidate who has passed the B.A. (Honours) Preliminary examination or Part I of the B.Sc. (Honours) Degree Examination of this University and has taken Mathematics as optional Branch from appearing for Part II of the B.Sc. (Pass) Degree examination on the production of the prescribed certificates of attendance in the subjects under Part II, to qualify for the B.Sc. Degree. He shall be exempted from examination in Part I—Language—of the B.Sc. Degree examination.

9. A candidate who has qualified for the B.A. Degree in Group (ii-A), or (ii-B) or (iii) under the Old Regulations or in Group (ii) under the New Regulations shall be permitted to appear for the B.Sc. Degree Examination after one year's course in a Constituent or an Affiliated college, provided

**B A.s to proceed
for B Sc.**

- (a) he takes as his main subject for the examination a Science subject different from the main and subsidiary subjects taken by him for the B.A. Degree examination, in which case he shall be exempted from examination in the subsidiary subjects, and the percentages of marks secured by him in the B.A. Degree examination in the main and subsidiary subjects shall be taken as the percentages of his marks in the two subsidiary subjects;

or

- (b) he takes as his main subject for the examination the subsidiary subject which he took for the B.A. Degree examination, in which case he shall be required to offer as a subsidiary subject a Science subject other than his main subject for the B.A. Degree examination, and shall be exempted from examination in a second subsidiary subject, and the percentage of marks secured by him in the B.A. Degree examination in the main subject shall be taken as the percentage of his marks in the second subsidiary subject.

Candidates coming under this Regulation shall be exempted from examination in Part I—Language.

10. A candidate who has qualified for the B.A. Degree in Mathematics under Group (i) Old Regulations or under Group (i-a) or (i') New Regulations or the B.A. (Honours) Degree in Branch I—Mathematics, shall be permitted to appear for the B.Sc. Degree Examination after one year's course in a Constituent or an Affiliated college, provided he takes for his course two subjects other than

Mathematics, one of which shall be his main subject and the other his subsidiary subject (other than Mathematics). He shall be exempted from examination in Part I—English and in Mathematics as a subsidiary subject and shall be credited with the percentage of marks secured by him in the subject in the B.A. or B.A. (Honours) Degree Examination.

11. A candidate who has qualified for the B.A. Degree in a Group other than any of those specified in Regulations 9 and 10 *supra* shall be permitted to appear for the B.Sc. Degree examination after a two years' course in a constituent or an affiliated college; he shall be exempted from examination in Part I—Language.

12. A candidate who has qualified for the B.Sc. Degree of this University shall be permitted to **A. B.Sc. may** **qualify in another** **subject** reappear for the B.Sc. Degree examination with a view to qualify for the Degree in an additional subject after one year's course in a constituent or an affiliated college, provided that

either

(a) he takes as his main subject for the examination a Science subject different from the main and subsidiary subjects taken by him for the previous B.Sc. Degree examination, in which case he shall be exempted from examination in the subsidiary subjects;

or

(b) if he takes as his main subject for the examination one of the subsidiary subjects which he took for the B.Sc. Degree Examination on the previous occasion and offers a new subsidiary subject, different from those (main or subsidiary) taken previously for the B.Sc. Degree examination, he shall be exempted from examination in the second subsidiary subject.

He shall also be exempted from examination in Part I—Language.

A candidate coming under the provisions of sub-paragraph (a) of this Regulation shall be declared to have passed the examination if he obtains not less than 35 per cent. of the marks in the main subject and not less than 30 per cent. in each of the divisions in the main subject.

A candidate coming under the provisions of sub-paragraph (b) of this Regulation shall be declared to have passed the examination if he obtains not less than (1) 30 per cent. in the new subsidiary subject, (2) 30 per cent. in each of the divisions in the main subject, (3) 35 per cent. of the total marks in the main subject; and (4) 35 per cent. of the grand total (main and new subsidiary subjects).

Such candidates under the above Regulation shall not be admitted at a Convocation a second time, but special Post Graduate Certificates setting forth the further subject or subjects passed by them and the dates of such examination shall be given to them.

Successful candidates under the above Regulation shall be placed in a separate list. They shall not be eligible for prizes or medals awarded by the University.

CHAPTER XLVI.

Degree of Bachelor of Science (Honours).

Conditions—Admission to Examinations

1. Candidates for the examination of Bachelor of Science (Honours) shall be required:

either

A

(1) to have passed the Intermediate Examination in Arts and Science of this University and to have satisfied the requirements under (i) of (c) Part III of Regulation 3 of Chapter *re* Intermediate Examination in Arts and Science or an examination accepted by the Syndicate as equivalent thereto;

and (2) to have undergone subsequently a further course of study in a Constituent or an Affiliated college for a period of not less than 3 academic years or nine terms;

or

B

(1) to have qualified for the Degree of Bachelor of Science (B.Sc.) or for the Degree of Bachelor of Arts (B.A.) as prescribed in this University or to have passed a Degree examination of some other University accepted by the Syndicate as equivalent thereto;

and (2) to have undergone subsequently a further course of study in a constituent or an affiliated college for a period of not less than two academic years or six terms.

2. The course shall comprise the
Course of study. study of—

PART I.

English or French or German.

PART II.

Optional Branch.

One of the following branches of knowledge—

I. Mathematics.

II. Physics, with Chemistry or Mathematics as subsidiary subject.

III. Chemistry with Physics as subsidiary subject

One of the following as main subject—

IV. Botany.

V. Zoology.

VI. Geology.

VII. *Physiology.

* For 1940 Examination *et seq.*

and any one of the following (other than the subject taken as the main subject) as a subsidiary subject:—

1. Mathematics.
2. Physics.
3. Chemistry.
4. Botany.
5. Zoology.
6. Geology.
- *7. Physiology.

Part I.—English or French or German.—The course of study shall be the same as for English or French or German under Part I of the B.Sc. Degree course.

Part II.—Optional Branch—Main subject.

The course of study in the Main subjects shall be as detailed below:—

I. *Mathematics.*

A candidate shall be required to have a sound knowledge of—

(a) Pure Mathematics—

- (1) Pure Geometry including Projective Geometry.
- (2) Algebra and Theory of Equations.
- (3) Plane Trigonometry.
- (4) Differential and Integral Calculus, including Reimann Integration. Cauchy's Theorem on Contour Integration and Fourier's Series.
- (5) Elementary Differential Equations.
- (6) Co-ordinate Geometry of Two Dimensions.
- (7) Solid Geometry—The Line, Plane, Sphere and Surfaces of the Second Degree.

(b) Applied Mathematics—

- (1) Statics, excluding the Theory of Potentials.
- (2) Dynamics of a Particle.
- (3) Dynamics of a Rigid Body—Motion in two dimensions.
- (4) Hydrostatics.
- (5) Astronomy, General and Elementary Spherical.

(c) Two of the following subjects at the option of the candidate:—

- | | | |
|---------------------------------|----|--------------------|
| (1) Dynamics | .. | A Special Subject. |
| (2) Astronomy | .. | Do. |
| (3) The Potentials | .. | Do. |
| (4) Elasticity | .. | Do. |
| (5) Hydro-dynamics and
Sound | .. | Do. |
| (6) Heat | .. | Do. |

A candidate shall give notice, through his college, a year before the date of the examination, of the particular subjects he proposes to take.

II. *Physics.*

A candidate shall be required to have a sound knowledge of the experimental side of the following subjects, and also such knowledge of the theoretical side of each as may be obtained by the applications of the Calculus, and simple Differential equations:—

- (1) Properties of Matter.
- (2) Heat.
- (3) Geometrical and Physical Optics.
- (4) Sound.
- (5) Magnetism and Electricity.
- (6) Modern Physics.

A candidate shall also be required to have a special knowledge, experimental and theoretical, of *one* of the following subjects, the choice of the subject being left to the option of the candidate:

- (1) The Kinetic Theory of Gases and its applications.
- (2) Radio-activity.
- (3) Radiation—A. Electrical Waves, Wireless Telegraphy and Telephony.
- (4) Radiation—B. X-Rays and their applications.
- (5) Spectroscopy and its applications.

A candidate shall give notice, through his college, a year before the date of the examination, of the particular subject he proposes to take.

III. *Chemistry.*

A candidate shall be required to show that he has made a more comprehensive study than for the B.Sc. Degree of the four main divisions of the subject:—

- (1) General Theoretical Chemistry including its historical development.
- (2) Physical Chemistry.
- (3) Inorganic Chemistry.
- (4) Organic Chemistry.

A candidate shall also be required to have a special knowledge, experimental and theoretical, of one of the following subjects, the choice of subject being left to the option of the candidate:—

- (1) Electro-Chemistry.
- (2) Mineralogy and Elementary Crystallography.
- (3) Elementary Crystallography and Stereo-Chemistry.
- (4) Metallurgical Chemistry.

(5) Tinctorial Chemistry.

(6) Biochemistry.

(7) Chemistry of the Rare Earths and Radio-elements.

A candidate shall give notice, through his college, a year before the date of the examination of the particular subject he proposes to take.

A candidate shall be required to be practically familiar with (a) The ordinary methods of qualitative inorganic analysis, (b) The chief volumetric and gravimetric methods of analysis of inorganic compounds including simple gas analysis, (c) The methods of detection and estimation of the more important organic radicals and the preparations of pure organic compounds, (d) the estimation of carbon, hydrogen, nitrogen, sulphur and halogens in organic compounds, (e) The more important methods of physico-chemical measurements.

IV. *Botany.*

A candidate shall be required to have made a comprehensive study of the following branches of Botany:—

(1) Morphology and Taxonomy of—

(a) Thallophytes.

(b) Bryophytes.

(c) Pteridophytes.

(d) Gymnosperms.

(e) Angiosperms.

(2) Ecological and Geographical Distribution of Phanerogams with special reference to South India.

(3) Fungi, specially with reference to their economic importance.

(4) Plant Physiology.

(5) Plant Histology.

- (6) Physiological Anatomy.
- (7) Palæobotany.
- (8) Cytology and Genetics.
- (9) Principles of Evolution and Heredity.
- (10) The chief Economic Plant Products.

Each candidate shall also be required to present as a special subject a topic chosen from one **Course of study**, of the sections mentioned above. He must give notice, through his college, a year before the examination, of the particular subject he proposes to present.

V. *Zoology.*

Theory.—The course shall be the same as for the B.Sc. Pass (Zoology Main) but treated more fully. In addition, candidates shall be expected to have made a special study of any one particular group of animals or any one of the following branches of Zoology:—

Cytology, Genetics, Histology, Invertebrate Embryology, Vertebrate Embryology, Animal Ecology, Marine Zoology, Entomology, Parasitology and Palæontology.

Practical.—The practical work will not be confined to the types enumerated for the B.Sc. (Pass). Candidates may be required to dissect any of the more common type of animals included in the groups prescribed, to identify specimens with the aid of manuals, to report on zoological collections, to make microscopic preparations, to cut sections with the microtome and to show their practical acquaintance with the methods employed in studying the embryology of the chick.

Each candidate shall give notice, through his college, a year before the date of the examination, of the special subject he proposes to present.

VI. *Geology.*

The course shall be the same as for the B.Sc. Pass (Geology Main) but treated more fully with the following additions:—

Mineralogy and Crystallography.—The thirty-two types of crystal symmetry, theories of crystal structure, systems of crystal notation, zonal characters, crystal projections and drawings; twin crystals, grouping and irregularities of crystals, parting planes, percussion figures, etched figures, etc., use of the Reflecting Goniometer. General mathematical relations of crystals and measurement of crystal angles.

Course of Study. Description and determination of minerals by chemical and physical tests.

The chief ores and minerals of commercial value; their distribution, occurrence, with special reference to Indian examples and their use; nature and structure of chief types of ore deposits.

Petrology.—The principles underlying the genesis and classification of rocks. Mechanical separation of rock constituents; examination of sands; methods of the preparation of rock sections for the microscope. Optical properties of crystals. Practical determination of the optical characters of the chief rock-forming minerals with the petrological microscope, including the use of convergent light. Determination of the nature and history of rocks by means of microscope.

Structural and Field Geology.—The relationships of structure of relief, drainage and economics. The composition and structure of rock masses as influencing scenery. Weathering and formation of soils. Each candidate is required to map and describe from his own personal observations the geology of an area elected by himself with the approval of the Professor.

Stratigraphy and Palaeontology.—The geological formations with their lithology, sub-divisional fossils, correlation and economics. The physical geography and vulcanicity of the different periods. General distribution of exist-

ing faunas and floras and their relation to those of former geological periods; morphological characters of the more important types of fossils; drawing of fossils; Geology of India brought up to date.

Candidates shall also be required to present a special subject out of the subjects prescribed. A candidate shall give notice, through his college, a year before the date of the examination, of the particular subject he proposes to take.

**VII. Physiology.*

The course shall be the same as for B.Sc. (Pass) Physiology (Main), but candidates shall be required to show a more comprehensive knowledge of the subject than required for B.Sc. (Pass) and shall be required to have made a special study of one of the following Branches of the subject:--

1. Blood and circulation.
2. Respiration.
3. Nutrition.
4. Neurology.
5. The sense organs.
6. Endocrinology.
7. Comparative Physiology.

Each candidate shall give notice, through the college, a year before the date of the examination, of the special Branch of the subject he proposes to present.

Subsidiary Subjects.

The course of study in the subsidiary subjects under Part II shall be the same as for Part II of the B.Sc. Degree course.

3. The scheme of examination shall be as follows:—

PART I—ENGLISH OR FRENCH OR GERMAN.

The examination shall be the same as for the B.Sc. (Pass) Degree, Part I, in the languages, viz., English, French or German, and shall consist of two papers, as follows:—

Scheme of Examination.

English.

			Hours.	Marks.
Prose	..	..	3	100
Composition	..	..	3	100
Total			..	200

French or German.

			Hours.	Marks.
Translation	..	..	3	100
Prescribed text-books	..	..	3	100
Total			..	200

PART II—OPTIONAL BRANCH.

I. *Mathematics.*

The examination shall be a written one and shall consist of the following papers:—

Scheme of Examination.

			Hours.	Marks.
1.	Pure Mathematics I	..	3	175
2.	Do. II	..	3	175
3.	Do. III	..	3	175
4.	Applied Mathematics I	..	3	175
5.	Do. II	..	3	175
6.	Do. III	..	3	175
7.	Optional subject I	..	3	175
8.	Do. II	..	3	175
Total			..	1,400

The papers shall contain questions on the principles developed in the ordinary treatment of the subject as well as exercises of moderate difficulty arising therefrom.

II. *Physics.*

Scheme of Examination.

The examination shall be both written and practical, and the scheme of examination shall be as follows:—

	Hours.	Marks
1. Properties of Matter ..	3	100
2. Heat and Sound ..	3	100
3. Sound and Light ..	3	100
4. Magnetism and Electricity ..	3	100
5. Modern Physics ..	3	100
6. Optional subject ..	3	150
7. Practical examinations (4 practicals of 3 hours each).	..	400
Laboratory notebooks ..	..	200
		<hr/>
		1,250
Subsidiary subject ..	..	150
		<hr/>
Total ..		1,400
		<hr/>

At the Practical Examination candidates will be expected to make physical measurements and observations of the more advanced kind.

Each candidate shall submit his laboratory notebooks containing the record of all his practical work performed during the period of study for the examination. The record shall be countersigned by the Professor or Professors under whom the candidate has worked to certify to be a *bona fide* record of work performed by the candidate. It shall be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

III. Chemistry.

Scheme of Examination. The examination shall be both written and practical, and the scheme of examination shall be as follows:--

		Hours.	Marks.
1. General Chemistry	..	3	125
2. Physical Chemistry	..	3	125
3. Inorganic Chemistry	..	3	125
4. Organic Chemistry	..	3	125
5. Optional subject	..	3	150
Practical examinations (4 practicals of 3 hours each)	.. ..	..	400
Laboratory notebooks	.. ..	..	200
			<hr/> 1,250
Subsidiary subject	.. ..	..	150
			<hr/>
	Total	..	1,400
			<hr/>

Each candidate shall submit his laboratory notebooks containing the record of all his practical work performed during the period of study for the examination. The record shall be countersigned by the Professor or Professors under whom the candidate has worked to certify it to be a *bona fide* record of work performed by the candidate. It shall be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

IV. *Botany.***Scheme of Examination.**

The examination shall be both written and practical, and the scheme of examination shall be as follows:—

	Hours.	Marks.
1. Algae, Fungi, etc.	3	150
2. Pteridophytes	3	150
3. Histology	3	150
4. Systematic Botany	3	150
5. Special subject	3	150
Practical examinations—		
(4 practicals of 3 hours each and 100 marks for each examination)		400
Laboratory notebooks and collections		100
Total—Main subject		1,250
Subsidiary Subject		150
Total ..		1,400

Scheme of Examination.

The practical examination may include—

- (1) The identification of Indian plants with the help of a flora or any other books allowed by the Examiners.
- (2) The preparation and correct interpretation of microscopic sections of plants.
- (3) The examination of a diseased or abnormal plant.
- (4) Practical Physiology and *viva voce* questions.

Each candidate shall submit a collection of named flowering plants, collected and preserved by himself. There may be also plants of any of the other main divisions of the

vegetable kingdom. The record shall be countersigned by the Professor or Professors under whom the candidate has worked to certify it to be a *bona fide* record of work performed by the candidate. It shall be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

V. Zoology.

Scheme of Examination. The examination shall be both written and practical, and the scheme of examination shall be as follows:—

	Hours.	Marks.
1. Invertebrata	3	150
2. Chordata	3	150
3. Vertebrate Embryology ..	3	150
4. General Principles ..	3	150
5. Special subject	3	150
Practical examinations—4 (each of 3 hours and 100 marks for each examination) .. ..	..	400
Laboratory notebooks .. ..	..	100
Total—Main subject .. ..	..	1,250
Subsidiary subject .. ..	..	150
Total ..	..	1,400

Candidates may also be examined by *viva voce* questions.

Each candidate shall submit his laboratory note-books containing the record of all practical work performed during the period of his study. In addition to his laboratory notebooks, a candidate shall submit a representative collection of microslides made by him during his course. The record shall be countersigned by the Professor or Professors under whom the candidate has worked to certify it to be a

Scheme of Examination

bona fide record of work performed by the candidate. It shall be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

VI. *Geology.*

Scheme of Examination

The examination shall be both written and practical, and the scheme of examination shall be as follows:—

	Hours.	Marks.
1. General Geology and Structural	3	150
2. Stratigraphy and Palæontology.	3	150
3. Mineralogy	3	150
4. Petrology	3	150
5. Special subject	3	150
Practical examinations (4 practicals of 3 hours and 100 marks for each examination) .. ..	..	400
Laboratory notebooks and other records .. ..	..	100
Total—Main subject .. ..	..	1,250
Subsidiary subject .. ..	..	150
Total ..	..	1,400

Viva voce questions may be asked.

Each candidate shall submit his laboratory note-books and other records relating to practical work and specimens. The record shall be countersigned by the Professor or Professors under whom the candidate has worked to certify it to be a *bona fide* record of work performed by the candidate. It shall be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

VII. *Physiology*.*

The examination shall be both written and practical, and the scheme of examination shall be as follows:—

		Hours.	Marks.
Written Examination— (General Physiology).	I	3	150
Written Examination— (Human Physiology).	II	3	150
Written Examination— (Human Physiology).	III	3	150
Written Examination— (Biochemistry).	IV	3	150
Written Examination— (Special subject).	V	3	150
Practical Examinations—4 (each of 3 hours and 100 marks for each examination) ..	..	..	400
Laboratory Records ..	..	..	100
Total—Main subject ..	..	..	1,250
Subsidiary subject ..	..	..	150
Total ..			1,400

Candidates may also be examined by *viva voce* questions.

Each candidate shall submit his laboratory note-books which shall contain the record of all the practical work performed by him during the period of study for the examination. The record shall be countersigned by the Professor or Professors under whom the candidate has worked, who should certify that it is a *bona fide* record of

*For 1940 Examination.

work performed by the candidate. It shall be submitted on the first day of the practical examination to the examiners engaged in conducting the practical examination.

Subsidiary subjects.

The examinations in the subsidiary subjects for the B.Sc. (Honours) Degree shall be the same as for the subsidiary subjects for the B.Sc. (Pass) Degree. The marks allotted to each subsidiary subject shall be 150.

Scheme of Examination

4. No candidate shall be eligible for the B.Sc. (Honours) Degree until he has passed the examination in Part I—English or French or German (unless otherwise exempted) and in one of the six branches of knowledge as prescribed.

5. No candidate shall be admitted to the examination in Part I—English or French or German —unless he has passed the Intermediate Examination in Arts and Science in this University or an examination recognised by the Syndicate as equivalent thereto, and has undergone the prescribed course for one academic year. The examination in Part I—English or French or German—may be taken at the end of the first year of the Honours Degree course.

6. No candidate shall be admitted to the Final Examination (Part II—Main Subject) unless he has passed in Part I—English or French or German.

Admission to Part II Examination.

7. A candidate for the B.Sc. (Honours) Degree may appear for the examination in the subsidiary subject or subjects at the end of the second year of the course.

8. On the first day of the practical examination in the main subject every candidate shall submit his laboratory note-books containing the drawings and other records relating to his practical work performed during the period

Submission of Practical records.

of study for the examination. The record shall be countersigned by the Professor or Professors under whom the candidate has worked and shall be certified to be a *bona fide* record of work performed by the candidate.

Time limit to appear for Final Examination. 9. A candidate for the B.Sc. Honours Degree shall appear for the Final Examination in Part II—

(1) not later than the end of the fourth year after commencing the Honours Degree course in a college; and
(2) in the case of Bachelors of Science or Bachelors of Arts proceeding to the B.Sc. (Honours) Degree examination, not later than three years after commencing the B.Sc. (Honours) Degree course in a college.

Final Examination to be taken only once. 10. No candidate shall be permitted to undergo the Final Examination in Part II for the Honours more than once.

For purposes of this Regulation, the Final Examination shall mean the examination in the main subject.

* A candidate for the Final examination shall be permitted to withdraw from the examination, provided he has not sat for the last paper in the written examination or the last practical examination in the subject; and provided he has given notice of withdrawal to the Registrar, within three clear days from the date of the last paper (theory or practical) which he answered. He shall be permitted to appear again for the examination in the main subject in the following year without producing any additional certificate of attendance.

Nothing in this Regulation shall apply to the examination in the subsidiary subject.

11. A candidate shall be declared to have passed the B.Sc. (Honours) Degree examination if he has obtained not less than—

(1) 40 per cent. of the total marks in Part I—English or French or German—for the two papers taken together, and

(2) 40 per cent. of the total marks in Part II and 30 per cent. of the marks in each division of Part II.

**Division of the
subjects for Exam-
ination.**

The division shall be as follows:—

- I. Mathematics.—(a) Pure Mathematics, (b) Applied Mathematics, (c) Optional subjects.
- II. Physics and III. Chemistry.—(a) Written examination in the main subject, (b) Practical examination and Laboratory note-books in the main subject, (c) subsidiary subject.
- IV. Botany and VI. Geology.—(a) Written examination in the main subject, (b) Practical examination and Laboratory note-books in the main subject, (c) subsidiary subject.
- V. Zoology.—(a) Written examination in the main subject (Papers I to IV), (b) Written examination in the main subject (Paper V—Special subject), (c) Practical examination in the main subject and laboratory record, (d) subsidiary subject.
- *VII. Physiology.—(a) Written examination in the main subject (Papers I to IV), (b) Written examination in the main subject (Paper V—Special subject), (c) Practical examination in the main subject and Laboratory records and (d) subsidiary subject.

All other candidates shall be deemed to have failed in the examination.

12. Candidates obtaining not less than 60 per cent. of the marks in Part I—English or French or German—shall be declared to have passed with distinction.

13. Successful candidates in the examination shall be ranked in the order of proficiency as determined by the total marks obtained by each and shall be arranged in three classes:—

**Classification of
successful candi-
dates.**

Candidates who obtain not less than 60 per cent. of the aggregate marks shall be placed in the first class; those

who obtain less than 60 per cent. but not less than 50 per cent. shall be placed in the second class; and all the other successful candidates shall be placed in the third class.

14. In the event of a candidate for the B.Sc. (Honours) Degree failing to satisfy the examiners in Part II of the examination he may be recommended by them for the B.Sc. Degree, provided that he obtains not less than $33\frac{1}{3}$ per cent. of the total marks and not less than 25 per cent. in each division of the examination in Part II.

Candidates for B.Sc. (Hons.)—when recommended for B.Sc.

15. A candidate not already eligible for the B.Sc. Degree, who, having failed completely in the B.Sc. (Honours) Degree examination, desires to appear for the B.Sc. Degree Examination, shall be allowed to do so subject to provisions in Regulation 17 *infra*, without the production of a further certificate of attendance in a constituent or an affiliated college in the subjects in which he has already appeared. He shall be exempted from re-appearance in Part I.

Failed candidates may appear for B.Sc.

16. A candidate not already eligible for the B.Sc. Degree, who, after being registered, presents himself for the B.Sc. (Honours) Degree examination in any year, and withdraws from the same and is prevented, through illness or otherwise, from subsequently presenting himself for examination within the period prescribed under Regulation 9 (1) of this Chapter, shall be allowed to appear for the B.Sc. Degree examination subject to provisions in Regulation 17 *infra*, without the production of a further certificate of attendance in a constituent or an affiliated college. He shall be exempted from re-appearance in Part I.

Withdrawn candidates from (Hons.) may appear for B.Sc.

17. A candidate appearing for the B.Sc. Degree Examination under Regulations 15 and 16 above, shall offer for the examination the same subjects (main and subsidiary) taken by him for the B.Sc. (Hons.) Degree

course and examination, provided that (a) a candidate shall be required to take a second subsidiary subject for the B.Sc. Degree Examination and shall produce a certificate of attendance and progress that he has undergone the prescribed course in the second subsidiary subject in a constituent or an affiliated college for a period of not less than one academic year; and (b) a candidate who had taken Mathematics as his main subject for the B.Sc. (Hons.) Degree course shall be required to take two subsidiary subjects for the B.Sc. Degree Examination and shall produce a certificate of attendance and progress that he has undergone the prescribed course in the two subjects in a constituent or an affiliated college for a period of not less than one academic year.

18. A candidate who has passed the B.Sc. Degree Examination, shall be permitted to appear for the B.Sc. (Honours) Degree Examination after a further course of two years in a constituent or an affiliated college, provided that the main subject offered for the B.Sc. (Honours) Degree Examination shall be the main subject in which he has already qualified for the B.Sc. Degree. He shall be exempted from examination in Part I, and the examination in the subsidiary subject, and shall be credited with the percentage of marks, whichever is higher, obtained by the candidate in either of the two subjects taken by him for the B.Sc. Degree Examination, subject to the selection or restriction of the subsidiary subject under Regulation 2 of this Chapter.

19. A candidate who has qualified for the B.A. Degree in Groups (i), (ii-a), (ii-b) or (iii) of the Old Regulations,* or in Groups (i) or (ii) of the New Regulations shall be permitted to appear for the B.Sc. (Honours) Degree Examination, after a further course of two years in a constituent or an affiliated college, provided that the main subject offered for the B.Sc. (Honours) Degree Examination shall be the main subject in which he has already qualified for the B.A.

*Old Regulations are those that were in force prior to 1930-31 and the New Regulations are those that came into force from the examinations of 1931.

Degree. He shall be exempted from examination in Part I, and the examination in the subsidiary subject and shall be credited with the percentage of marks obtained by him in the B.A. Degree Examination, if it is the one admissible under Regulation 2 of this Chapter. If the candidate has not taken the prescribed subsidiary subject, he shall be required to pass in the subsidiary subject after undergoing one year's course of study in the subject.

20. A candidate proceeding to the B.Sc. (Honours) Degree Examination under Regulations 18 and 19 above shall be required to appear for the Final Examination not later than three years after commencing the Honours course in a college.

Time limit for
post-graduate
students.

CHAPTER XLVII.

Degree of Master of Science.

1. A candidate may present himself for the Degree of Master of Science (M.Sc.) under the following conditions:—

Eligibility to M Sc.

- (a) (1) Bachelor of Arts in a Science subject (including groups *i-a* and *i-b*), and
- (2) Bachelor of Science.

Two years after having qualified for the degree of B.A. or B.Sc. of this University or the degree of any other University accepted by the Syndicate as equivalent thereto, and not earlier than two years from the date of approval of registration by the Syndicate for the purpose of pursuing research in accordance with the conditions laid down in Regulation 2 *infra*.

- (b) (1) Bachelor of Arts (Honours) in a Science subject
- (2) Master of Arts in a Science subject.
- (3) Bachelor of Science (Honours)

- (4) Bachelor of Medicine and Surgery
- (5) Bachelor of Engineering
- (6) Bachelor of Science (Agriculture)
- (7) Bachelor of Veterinary Science
- (8) Licentiate in Teaching in a Science subject.

One year after having qualified for any one of the degrees of this University mentioned above or the degree of any other University accepted by the Syndicate as equivalent thereto and not earlier than one year from the date of registration of approval by the Syndicate for the purpose of pursuing research in accordance with the conditions laid down in Regulation 2 *infra*.

2. A candidate for the degree shall apply to the Registrar to be registered as a candidate, stating in his application for registration:—

Registration of candidates.

- (1) his qualifications and attainments, and previous study and research, if any;
- (2) the special subject in which he intends to prosecute research; and
- (3) the name of the Teacher of this University or of an Institution recognized by or affiliated to this University under whose supervision and guidance he proposes to work and the name of the Laboratory, Institute or College where he proposes to conduct his research; accompanied by the written consent of the Teacher, agreeing to supervise his work, and in the case of a candidate proposing to do work in an Institution, from the Head of the Institution permitting him to work.

3. Every such application shall be considered by the Syndicate and if approved, the candidate shall be registered as a candidate for the degree.

4. After the expiration of the period of post-graduate study and research work, every candidate shall submit with his application for the Degree four copies of the thesis, printed or typewritten, embodying the results of the research carried out by him, together with the prescribed fee.

The candidate shall also submit with his application and thesis a certificate from the Teacher under whom he worked that the thesis submitted is a record of research work done by the candidate during the period of study under him, and that the thesis has not previously formed the basis for the award to the candidate of any Degree, Diploma, Associateship, Fellowship, or other similar title; together with a statement from the Teacher indicating the extent to which the thesis represents independent work on the part of the candidate.

5. The application for the Degree and the thesis must be forwarded so as to be received by the Registrar on any day in the month of March or October and after completion of the research work in accordance with the conditions laid down in Regulation 2 *supra*.

A candidate may also forward as supplementary papers to his thesis printed copies of any contribution or contributions to the knowledge of his subject or of any cognate branch of science he may have published in Journals or Periodicals and the names of such Journals or Periodicals

6. The thesis shall be referred by the Syndicate for report to a Board of three Examiners, and on receipt of the said report, the Syndicate shall decide whether the candidate has qualified for the Degree or not. Its decision shall be published in the *Fort St. George Gazette*.

7. The thesis whether approved or not may not be published without the sanction of the Syndicate, and the Syndicate shall grant permission for the publication under such conditions as it may impose.

CHAPTER XLVIII.

Degree of Doctor of Science.

Eligibility of candidates for applying. 1. A candidate may present himself for the Degree of Doctor of Science (D.Sc.) under the following conditions:—

- (a) (1) Master of Arts in a science subject.
- (2) Bachelor of Science (Honours).
- (3) Bachelor of Medicine and Surgery.
- (4) Bachelor of Engineering.
- (5) Bachelor of Science (Agriculture).
- (6) Bachelor of Veterinary Science.
- (7) Licentiate in Teaching in a science subject.

four years after having qualified for any one of the Degrees of this University mentioned above or a degree of any other University accepted by the Syndicate as equivalent thereto.

(b) *Master of Science*.—Three years after having qualified for the M.Sc. Degree of this University or a degree of any other University accepted by the Syndicate as equivalent thereto.

2. The candidate shall state in his application the special subject within the purview of the Regulations pertaining to his previous qualifying degree, upon a knowledge of which he rests his qualification for the Doctorate, and shall with his application submit four copies of his thesis or published memoir of work done by him, which shall be an original contribution to Science of distinguished merit.

3. The thesis or memoir of work shall be accompanied by a declaration signed by the candidate that it has been composed by himself and a certificate that the thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship, or other similar title.

4. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall also state whether his research has been conducted independently, or in co-operation with others and in what respect his investigations appear to him to tend to the advancement of Science or otherwise form a valuable contribution to the literature of the subject dealt with.

The application and the thesis must be forwarded with the prescribed fee so as to reach the Registrar on any day in the month of March or October, and after the lapse of the period mentioned in Regulation 1 *supra*.

5. The candidate may with the thesis forward printed copies of any original contribution or contributions to the knowledge of his subject or of any cognate subject which may have been published by him independently or conjointly and upon which he relies in support of his candidature.

6. The thesis together with any other contributions and papers submitted shall be referred by the Syndicate for report to a Board of three Examiners.

7. The Board shall report to the Syndicate the result of the examination of the thesis and of the oral and practical examination, if any; and on receipt of the

said report, the Syndicate shall decide whether the candidate has qualified for the Degree or not. Its decision shall be published in the *Fort St. George Gazette*.

8. Successful candidates shall publish their theses before the award of the Doctorate Degree at a Convocation and shall inscribe it "Thesis approved for the Degree of Doctor of Science in the University of Madras". Other candidates shall be at liberty to publish their theses but not under the name of the University.

CHAPTER XLIX

Degree of Bachelor of Laws.

1. No candidate shall be eligible for the Degree of Bachelor of Laws unless he has taken the Degree of Bachelor of Arts or Bachelor of Science in this University or a Degree in some other University accepted by the Syndicate as equivalent thereto, and has also passed the two Examinations in Law.

First Examination in Law.

2. No candidate shall be admitted to the First Examination in Law, unless he forwards before the date of the commencement of the examination satisfactory evidence of having taken the Degree of Bachelor of Arts or Bachelor of Science of this University, or a Degree of some other University accepted by the Syndicate as equivalent thereto, and of having undergone a course of study in the subjects prescribed for the Examination, in a constituent or an affiliated college for a period of one academic year.

3. Candidates for the First Examination in Law shall be examined in the following subjects:—

(i) Jurisprudence (One paper).

(ii) Roman Law. (One paper).

- (iii) The Law of Contracts, including Negotiable Instruments and Specific Relief. (Two papers).
- (iv) The Law of Torts. (One paper).
- (v) Indian Constitutional Law. (One paper).

Each paper shall be of three hours' duration, except the paper on Indian Constitutional Law which shall be of two hours' duration.

4. (a) A candidate shall be declared to have passed the Examination if he obtains not less than forty per cent. of the total marks, and not less than one-third of the marks in each Division of the Examination. The Divisions shall be as follows:—

- (i) Jurisprudence, Roman Law, and Indian Constitutional Law.
- (ii) The Law of Contracts, including Negotiable Instruments and Specific Relief, and the Law of Torts.

All other candidates shall be deemed to have failed in the Examination.

(b) A candidate who fails in the whole Examination, but obtains not less than fifty per cent. of the marks in any division shall be exempted from re-examination in the subjects included in the Division.

5. Successful candidates who pass the whole examination at one appearance shall be ranked in the order of proficiency as determined by the total marks obtained by each, and shall be arranged in three classes.

The *first*, consisting of those who obtain not less than sixty per cent. of the total marks.

The *second*, of those who obtain less than sixty per cent. but not less than fifty per cent. of the total marks.

The *third*, of those who obtain less than fifty per cent. but not less than forty per cent. of the total marks.

All candidates who pass the examination in compartments, Division by Division, shall be placed in the third class in a separate list.

B.L. Degree Examination.

6. No candidate shall be admitted to the B.L. Degree Examination unless he forwards **Qualification of candidates** before the date of the commencement of the examination, satisfactory evidence of having passed the First Examination in Law, and of having undergone a course of study in the subjects prescribed for the B.L. Degree Examination for one year in any constituent or affiliated college, after the date of the First Examination in Law at which the candidate passes;

provided that this Regulation shall not apply in the case of candidates who have, prior to the beginning of the academic year 1935-36, completed the prescribed course of study for the B.L. Degree Examination and have earned the attendance certificate for B.L. before passing the F.L. Examination.

Subjects for Examination 7. Candidates for the B.L. Degree Examination shall be examined in the following subjects:—

- (i) The Law of Property, with special reference to the Transfer of Property Act, the Indian Trusts Act and the Indian Easements Act. (Two papers).

Questions shall ordinarily be set only on such parts of the English Law of Property as deal with the general principles of the Law of Property and are calculated to enable students to appreciate the Indian Law of Property.

- (ii) Hindu Law (One paper).

- (iii) Muhammadan Law (One paper).

- (iv) The Principles of Land Tenures in the Madras Presidency. (One paper).
- (v) The Law of Evidence. (One paper).
- (vi) Criminal Law (Indian Penal Code). (One paper).

Each paper shall be of three hours' duration, except the papers on Muhammadan Law, the Principles of Land Tenures and the Law of Evidence which shall be of two hours' duration each.

8. (a) A candidate shall be declared to have passed the Examination, if he obtains not less than forty per cent. of the total marks in each Division of the Examination. The Divisions shall be as follows:—

- (i) The Law of Property and Madras Land Tenures.
- (ii) Hindu Law and Muhammadan Law.
- (iii) Criminal Law and the Law of Evidence.

All other candidates shall be deemed to have failed in the examination.

(b) A candidate who fails in the whole examination but obtains not less than fifty per cent. in any Division shall be exempted from re-examination in the subjects included in the Division.

9. Successful candidates who pass the examination in one appearance shall be ranked in the order of proficiency as determined by the total marks obtained by each, and shall be arranged in three classes:—

The *first*, consisting of those who obtain not less than sixty per cent. of the total marks.

The *second*, of those who obtain less than sixty per cent but not less than fifty per cent. of the total marks.

The *third*, of those who obtain less than fifty per cent. but not less than forty per cent. of the total marks.

All candidates who pass the examination in compartments, Division by Division, shall be placed in the Third Class in a separate list.

CHAPTER L.

Degree of Master of Laws.

1. No candidate shall be eligible for the degree of Master of Laws unless he has taken the degree of Bachelor of Laws of this University or a degree in some other University accepted by the Syndicate as equivalent thereto and has also passed the M.L. Degree Examination.

No candidate shall be admitted to the examination for the degree of Master of Laws unless he has passed not less than two years previously the examination for the degree of Bachelor of Laws in this University or a degree examination in some other University accepted by the Syndicate as equivalent thereto.

Each candidate must forward before the date of the commencement of the examination satisfactory evidence of having taken the degree of Bachelor of Laws of this University, or a degree of some other University accepted by the Syndicate as equivalent thereto.

Candidates for the degree of Master of Laws shall be examined in one of the following branches:—

BRANCH I.—Jurisprudence.

1. Jurisprudence General.
2. Comparative Jurisprudence, (with specific reference to Roman, Hindu and Muhammadan Systems).

-
3. History of the Common Law of England.
 4. History of Equity and Equity Jurisprudence.
 5. Legislation (Theory, Method and Interpretation).
 6. One of the following:—
 - (a) Roman Law.
 - (b) Continental Civil Law.
 - (c) Ancient Law and Custom including Customary Law in India, (including Burma).
 7. Essay.

BRANCH II.—Constitutional Law.

1. Constitutional Law of England and its History
2. Indian Constitutional Law and its History.
3. Constitutional Law of the British Dominions and other countries, e.g., U.S.A., Japan, Germany.
4. Public Authorities, Corporations and Officers.
5. Law of Elections.
6. British India and the Indian States (with special reference to Treaties).
7. Essay.

BRANCH III.—International Law. .

1. }
and } Public International Law to be studied with
2 } documents—Two papers.
3. Private International Law—General.
4. Private International Law—Domicile.
5. Prize Law.

6. One of the following as a special subject:—

- (a) Outlines of the History of Diplomacy and Diplomatic Practice.
- (b) League of Nations (Constitution and powers especially International Court of Justice).
- (c) The Monroe Doctrine and Interstate Law in the United States and International Law in the Far East.
- (d) British India and the Indian States, (including Treaties).

7. Essay.

BRANCH IV.—Torts and Crimes.

- 1. Theory of Crimes and the Punishments including Criminology.
- 2. Laws of Crimes and Criminal Procedure in India.
- 3. History of Criminal Law and Procedure in England.
- 4. Comparative Criminal Jurisprudence including Procedure.
- 5. Law of Torts and its History.
- 6. Negligence and Nuisance and Libel and Slander.
- 7. Essay.

BRANCH V.—Law of Obligations.

(Contracts and Torts).

- 1. Law of Contracts and its History.
- 2. Law of Torts and its History.
- 3. Remedies of Specific Performance, Injunctions and Damages, and their History.

4, 5, 6. Any three of the following:—

- (a) Negotiable Instruments.
 - (b) Sale of Goods and Bailments and Carriers.
 - (c) Agency and Partnership.
 - (d) Domestic relations, Husband and Wife, Parent and Child, Master and Servant.
 - (e) Negligence, Nuisance, Libel and Slander.
7. Essay.

BRANCH VI.—Mercantile Law.

- 1. Company Law.
- 2. Any one of the following:—
 - (a) Bankruptcy.
 - (b) Patents, Copyright and Trade Marks.
 - (c) Insurance—Life, Fire and Marine.
- 3. Banking including Negotiable Instruments.
- 4. Sale of Goods.
- 5. Agency and Partnership.
- 6. Maritime Law (Merchant Shipping, Bills of Lading, Charter-parties and Collisions).
- 7. Essay.

BRANCH VII.—Personal Laws.

- 1. Hindu Law—Adoption, Marriage and Guardianship.
- 2. Hindu Law—Joint Family and Succession.
- 3. Hindu Law Texts and their History and rules of Interpretation.
- 4. Law of Hindu and Muhammadan Endowments.
- 5. Muhammadan Law and its History.
- 6. Statute Law relating to Guardianship, Marriage and Succession in India.
- 7. Essay.

BRANCH VIII.—Transfer of Property.

- 1. Law of Transfer of Property— In England and in India.
- 2. Vendors and Purchasers and Mortgages.

3. Wills, Succession and Bankruptcy.
4. Compulsory and Judicial Sales.
5. Law of Private Trusts.
6. Public Trusts and Charities.
7. Essay.

BRANCH IX.—Real and Personal Property.

1. Real Property.
2. Personal Property.
3. Highways—including Foreshore and Seashore.
4. Easements and Waters.
5. Land Tenures in India—Customary.
6. Land Tenures in India—Statute-Law
7. Essay.

3. Candidates who obtain not less than one-third of the marks assigned to each sub-division, and not less than forty per cent. on the whole, shall be declared to have passed the examination. All other candidates shall be deemed to have failed in the examination.

**Marks qualify-
ing for a pass.** Successful candidates shall be ranked in the order of proficiency as determined by the total marks obtained by each and shall be arranged in three classes:—

The *first*, consisting of those who obtain not less than sixty per cent. of the total marks.

The *second*, of those who obtain not less than fifty per cent. of the total marks.

The *third*, of those who obtain not less than forty per cent. of the total marks.

The examiners shall be at liberty to bracket candidates when the difference between them amounts only to a very small number of marks.

CHAPTER LI.

Degree of Doctor of Laws.

1. Any Master of Laws of the University of Madras may offer himself as a candidate for the degree of Doctor of Laws; provided one year has elapsed from the time when he passed the examination for the degree of Master.

2. Every candidate shall state in his application the special subject within the purview of the regulations for the degree of Master of Laws, upon a knowledge of which he rests his qualification for the Doctorate, and shall, with the application, transmit three copies, printed or type-written, of a thesis that he has composed upon some branch of law, or of the history or philosophy of law. The candidate shall indicate generally in a preface to his thesis and especially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others and the portions of thesis which he claims as original: he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and in what respects his investigations appear to him to advance the study of law.

Application. The regulations for the degree of Master of Laws, upon a knowledge of which he rests his qualification for the Doctorate, and shall, with the application, transmit three copies, printed or type-written, of a thesis that he has composed upon some branch of law, or of the history or philosophy of law. The candidate shall indicate generally in a preface to his thesis and especially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others and the portions of thesis which he claims as original: he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and in what respects his investigations appear to him to advance the study of law.

Thesis. The candidate shall indicate generally in a preface to his thesis and especially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others and the portions of thesis which he claims as original: he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and in what respects his investigations appear to him to advance the study of law.

3. Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of the science or study of law whether published conjointly or independently, upon which he relies in support of his candidature.

Original contributions to science or study of law Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of the science or study of law whether published conjointly or independently, upon which he relies in support of his candidature.

4. No application shall be entertained unless two Members of the Faculty of Law or two Doctors of Laws shall have testified, to the satisfaction of the Syndicate that since graduating as Bachelor of Laws, the candidate has practised his profession with repute for five years and that, in habits and character, he is a fit and proper person for the degree of Doctor.

The application and thesis must be forwarded so as to be received by the Registrar on any day in the month of March or October of any year.

5. The thesis mentioned in Regulation 2 of this Chapter and the original contributions, if any, mentioned in Regulation 3 of this Chapter shall be referred by the Syndicate to a Board consisting of the President of the Faculty of Law and two other persons.

6. If the thesis is approved by the Board, he shall not be required to submit to any further written examination; but he may be required by the Board at their discretion, to appear before them to be tested orally with reference to the thesis, and the special subject selected by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral examination, if any; and if the Syndicate, upon the report, considers the candidate worthy of the degree of Doctor of Laws, they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of the science or study of law.

7. Every candidate shall be at liberty to publish his thesis, and the thesis of every successful candidate shall be published by the University with the inscription 'Thesis approved for the Degree of Doctor of Laws in the University of Madras.'

CHAPTER LII.

*Degree of Medicine and Surgery.

Degree of Bachelor of Medicine and Surgery.

1. Candidates for the degree of Bachelor of Medicine and Surgery shall be required.—

* For Regulations in force prior to 1928, vide APPENDIX XIX of Vol. I, Part II of the University Calendar for 1931-32.

(i) to have completed the age of seventeen years on or before the date of admission to a college of Medicine for registration as medical students;

(ii) to have passed the Intermediate Examination in Arts and Science of this University, taking Physics and Chemistry as two of the three optional subjects under Part III of the Intermediate Examination, or an examination accepted by the Syndicate as equivalent thereto;

(iii) to have subsequently studied for a period of six months in a college affiliated to or recognised by the University, the subjects of Inorganic Chemistry, Physics and Biology, and passed the Pre-Registration Examination of this University or an Examination recognised by the General Medical Council of Great Britain and Ireland and accepted by the Syndicate as equivalent thereto;

(iv) to have, subsequent to passing the Pre-Registration Examination, been engaged for not less than five years in professional study in a college of Medicine affiliated to or recognised by the University, provided that not less than two academic years or six terms of medical study, preceding the Final M.B. & B.S. Examination, be spent in attendance at the University of Madras on courses of instruction in the subjects of the curriculum;

(v) The academic year shall consist of three terms spring, autumn and winter. The spring term will extend from 1st January to 31st March, the autumn term from 1st July to 30th September, and the winter term from 1st October to 31st December.

(vi) In the case of the examinations other than the Final, candidates who fail at the examination or having applied for admission do not appear for the examination, or having obtained the prescribed certificate do not apply for admission to the examination although qualified to do so,

shall be required to produce a certificate of further study for at least one term before appearing for the next succeeding examination.

No candidate who failed in any one of the clinical subjects of the Final M.B. & B.S. Degree Examinations shall be permitted to appear again for the examination unless he puts in a further course of hospital practice in the subject for at least one term.

(vii) The Examination shall be held twice a year in
Dates of Exam- the months of April and December and
inations will commence on the following days:—

Pre-Registration Examination—1st Monday in April and 10th December.

First and Second M.B. & B.S. Examinations—1st Monday in April and 4th Monday in November.

Final M.B. & B.S. Degree Examination—2nd Monday in April and 4th Monday in November.

Pre-Registration Examination.

2. A candidate for the examination
Courses of study shall undergo a course of study extend-
and Subjects ing over a period of six months, and shall be examined in

(a) Inorganic Chemistry (according to a syllabus)

(b) Physics (Do.)

and (c) Biology (Do.)

The examination in each subject shall be written, practical and oral.

3. No candidate shall be admitted to the examination unless he has produced satisfactory evidence of having complied with the provisions contained in clause (ii) of Regulation 1 of this Chapter, and has produced the prescribed certificates.
Conditions of admission.

4. Candidates who have passed Part II (Old Regulations) or Part III (New Regulations) of the B.A. Degree or Part II of the B.Sc. (Pass) or B.Sc. (Hons.) or B.A. (Hons.) (Old Regulations) Degree Examination of the Madras University with Physics or Chemistry or Botany and Zoology (together) as optional subjects or of any other Indian University (where practical courses and examinations are held) accepted by the Syndicate as equivalent thereto, shall not, however, be required to produce the prescribed certificates for, or to pass in, any of the subjects in which they have passed at the Degree Examination. Such candidates shall, however, be required to pay the prescribed fee for the whole Examination.

5. A candidate for the examination shall be declared to have passed the examination if he obtains not less than one-half of the marks in the written, and not less than one-half of the marks in the practical and oral taken together in each of the subjects, Inorganic Chemistry, Physics and Biology. All other candidates shall be deemed to have failed in the examination.

Exemption from re-examination in the subject already passed

6. Candidates for the examination who fail, but obtain passing marks in any subject shall be exempted from re-examination in that subject.

7. A candidate who after qualifying for admission to the Examination applies therefor and fails four times shall not be permitted to take the Pre-Registration Examination again. If a candidate, whose name has been registered for the Examination, absents himself therefrom, he shall be deemed to have failed in the Examination.

8. Candidates who pass the whole examination on the first occasion of appearing therefor shall be ranked in the order of proficiency as determined by the total number of marks obtained by each and shall be arranged in two classes; the first consisting of those who

Classification of successful candidates

have obtained not less than sixty-five per cent of the aggregate number of marks, the second consisting of all the others.

Candidates who pass in the first class and who obtain not less than seventy-five per cent of the marks in any subject shall be declared to have passed with distinction in that subject.

Candidates who pass the whole examination at a subsequent appearance shall be ranked only in the second class.

All candidates who pass the examination subject by subject shall be ranked in the second class separately.

First M.B. & B.S. Examination.

9. A candidate for the Examination shall undergo a course of study extending over a period of one academic year for Part I, Organic Chemistry and two academic years for Part II, Anatomy including Elements of Human Embryology, and Physiology including Biochemistry after passing the Pre-Registration Examination and shall be examined in

Part I—(a) Organic Chemistry (according to a syllabus).

Part II—(b) Anatomy, including Elements of Human Embryology.

and (c) Physiology including Biochemistry (according to a syllabus).

The examination in each subject shall be written, practical and oral.

10. Candidates may present themselves for the whole Examination at one time, or may take the examination in two Parts.

11. No candidate shall be admitted to Part I, Part II or whole of the examination unless he has passed the Pre-Registration Examination of this University, or an examination accepted by the Syndicate as equivalent thereto and has produced the prescribed certificates.

Qualification for admission

12. A candidate for the examination shall be declared to have passed in Part I of the examination if he obtains in Organic Chemistry not less than one-half of the marks in the written, and not less than one-half of the marks in the practical and oral taken together, and to have passed Part II of the examination if he obtains not less than one-half of the marks in the written part of each of the subjects, Anatomy (including Elements of Human Embryology), and Physiology, (including Biochemistry) respectively, and not less than one-half of the marks in the practical and oral taken together in each subject. All other candidates shall be deemed to have failed in the examination.

13. Candidates for the Examination who fail but obtain passing marks in any subject shall be exempted from re-examination in that subject.

14. Candidates who pass Parts I and II of the examination on the first occasion of appearing therefor shall be ranked in the order of proficiency as determined by the total number of marks obtained by each in both Parts and shall be arranged in two classes; the first consisting of those who have obtained not less than seventy per cent of the aggregate number of marks; the second consisting of all the others.

Candidates who pass in the first class and who obtain not less than seventy-five per cent of the marks in any subject shall be declared to have passed with distinction in that subject.

Candidates who pass the whole examination at a subsequent appearance shall be ranked only in the second class.

All candidates who pass the examination subject by subject shall be ranked in the second class separately.

Second M.B. & B.S. Examination.

15. A candidate for the Examination shall undergo a course of study extending over a period of one academic year for Pharmacology. Hygiene and Ophthalmology and two academic years for General Pathology

with Bacteriology taken concurrently and subsequent to passing the First M.B. & B.S. Examination and shall be examined in:—

Part I—

(a) Pharmacology,

Part II—

(b) Hygiene,

(c) General Pathology with Bacteriology,
and (d) Ophthalmology.

The course in Ophthalmology shall include attendance at an Ophthalmic Hospital or Ophthalmic Wards of a General Hospital on three days in the week for a period of three months.

The examination shall be written, practical and oral in the case of Pharmacology, Hygiene and General Pathology with Bacteriology and written and oral in the case of Ophthalmology.

16. Candidates may present themselves for the whole examination at one time or may take the examination in two Parts.

17. No candidate shall be admitted to Part I, Part II or whole of the Examination unless he **Qualification for admission** has passed the First M.B. & B.S. Examination of this University or an Examination accepted by the Syndicate as equivalent thereto and has produced the prescribed certificates.

18. A candidate for the Examination shall be declared to have passed in Part I of the **Marks qualifying for a pass** Examination if he obtains in Pharmacology not less than one-half of the marks in the written and not less than one-half of the marks in the Practical and Oral taken together and to have passed Part II of the Examination if he obtains not less than one-half of the marks in the written part of each of the subjects, Hygiene, General Pathology with Bacteriology and Ophthalmology, and not less than one-half of the marks in the practical and oral taken together in Hygiene

and General Pathology with Bacteriology and not less than one-half of the marks in Oral Ophthalmology. All the other candidates shall be deemed to have failed in the examination.

Exemption from re-examination in the subject already passed.

19. Candidates for the examination who fail but obtain passing marks in a subject shall be exempted from re-examination in that subject.

20. Candidates who pass Parts I and II of the examination on the first occasion of appearing therefor shall be ranked in the order of proficiency as determined by the total number of marks obtained by each in both Parts and shall be arranged in two classes, the first consisting of those who have obtained not less than seventy per cent of the aggregate number of marks, the second consisting of all the others.

Candidates who pass in the first class and who obtain not less than seventy-five per cent of the marks in any subject shall be declared to have passed with distinction in that subject.

Candidates who pass the whole examination at a subsequent appearance shall be ranked only in the second class.

All candidates who pass subject by subject shall be ranked in the second class separately.

Final M.B. & B.S. Examination.

21. A candidate for the examination shall undergo a course of study extending over a period of one academic year for Forensic Medicine and three academic years for Surgery and Obstetrics and Gynaecology taken concurrently and subsequent to passing the First M.B. & B.S. Examination and shall be examined in

Part I—

(a) Forensic Medicine,

Part II—

- (b) Medicine,
- (c) Surgery,
- (d) Obstetrics and Gynaecology.

Medicine.

Medicine. 22. The course in medicine shall include:

- (a) An appointment for nine months as Clinical Clerk in the medical wards of a recognised hospital of which at least two months shall be in the final year; and
- (b) An appointment for three months as Clinical Clerk in the medical out-patients department of a recognised hospital.

Attendance at recognised courses of instruction. 23. Every candidate for the M.B. & B.S. degree shall also attend recognised courses of instruction in the following subjects:—

- (i) A course of systematic instruction in the principles and practice of Medicine.
- (ii) Instruction in applied Anatomy and Physiology and in Clinical Pathology.
- (iii) Infectious Diseases—with attendance as Clinical Clerk at a recognised hospital on two days in the week for a period of three months;
- (iv) Mental Diseases—with attendance as Clinical Clerk at a recognised Mental Hospital on one day in the week for a period of three months;
- (v) Tuberculosis—with attendance as Clinical Clerk at a Tuberculosis Hospital on one day in the week for a period of three months;
- (vi) Medical Therapeutics.

- (vii) Dermatology—with attendance at the special departments on two days in the week for a period of three months;
- (viii) Instruction in Vaccination by a qualified Health Officer.
- (ix) Diseases of Children.

24. The examination in Medicine may include questions on the above-mentioned subjects, but separate examinations in those subjects will not be held.

Surgery.

25. The course in Surgery shall include—

- (a) An appointment for nine months as Surgical Dresser in the surgical wards of a recognised hospital of which at least two months shall be in the final year; and
- (b) An appointment for three months as Surgical Dresser in the out-patient department of a recognised hospital.

26. Every candidate for the M.B. & B.S. Degree shall also attend recognised courses of instruction in the following subjects:—

**Attendance at
recognised courses
of instruction.**

- (i) A course of systematic instruction in the principles and practice of Surgery;
- (ii) Instruction in applied Anatomy and Physiology and Clinical Pathology;
- (iii) Oto-Rhino-Laryngology—with attendance as a Clinical Clerk at a recognised clinic on three days in the week for a period of three months;
- (iv) Orthopaedics—two days in the week for three months;
- (v) Administration of Anaesthetics;
- (vi) Operative Surgery;

- (vii) Radiology with attendance at an X-ray institute on three days in the week for one month;
- (viii) Venereal—Diseases—with attendance at a Venereal clinic for two days in the week for a period of three months.

27. The Examination in Surgery may include questions on the above-mentioned subjects, but separate examinations in these subjects will not be held.

Obstetrics & Gynaecology.

Obstetrics and Gynaecology. 28. The course in Obstetrics & Gynaecology shall include:—

- (a) An appointment as Clinical Clerk at an ante-natal clinic and maternity wards of a lying-in-hospital for a period of three months, and the personal conduct of twenty cases of labour of which five at least shall be under supervision; and
- (b) An appointment as Clinical Clerk in the Gynaecological wards and out-patient department of a recognised hospital for a period of three months.

Attendance at recognised courses of instruction. 29. Every candidate for the M.B. & B.S. Degree shall also attend recognised courses of instruction in the following subjects:—

- (a) Instruction during a period of at least two terms comprising courses of systematic instruction in the principles and practice of Obstetrics & Gynaecology.
- (b) Lectures or demonstrations in Clinical Obstetrics & Gynaecology, and attendance on in-patient and out-patient Gynaecological practice.

30. Every candidate for the M.B. & B.S. Degree before commencing the study of practical midwifery shall

have held the appointments of Clinical Medical Clerk and Surgical Dresser and shall have attended a course of lectures on Medicine, Surgery and Obstetrics and Gynæcology.

31. A certificate that the candidate has conducted the above mentioned twenty cases of labour should be given by a member of the staff of the lying-in-hospital or of a maternity charity hospital as may be recognised by the University of Madras from time to time after consulting the Board of Studies in Medicine.

32. Candidates may present themselves for the whole examination at one time or may take the examination in two Parts.

33. The examination in each subject shall be written and oral in the case of Forensic Medicine, written, clinical and oral in the case of Medicine; written, clinical, practical and oral in the case of Surgery and Obstetrics and Gynæcology.

**Eligibility for
admission.**

34. (a) No candidate shall be admitted to Part I of the examination unless—

- (1) he has previously passed the Second M.B. & B.S. Examination or an examination accepted by the Syndicate as equivalent thereto; and
- (2) he has produced the prescribed certificates; and

(b) no candidate shall be admitted to Part II of the examination unless—

- (1) he has passed the First M.B. & B.S. Examination or an examination accepted by the Syndicate as equivalent thereto not less than 3 academic years previously;
- (2) he has passed the Second M.B. & B.S. examination or an examination accepted by the Syndicate as equivalent thereto not less than one academic term previously;

(3) he was engaged in medical studies and has earned the certificates of attendance at a college recognized by or affiliated to the Madras University at least for the fourth year and fifth year of the course of studies prescribed for the M.B. & B.S. Degree Examination; and

(4) he has produced the prescribed certificates.

35. A candidate for the examination shall be declared to have passed the examination if he obtains not less than one-half of the marks in the written part of each of the subjects, Forensic Medicine, Medicine, Surgery and Obstetrics and Gynaecology, not less than one-half of the marks in Oral Forensic Medicine, and not less than one-half of the marks in Clinical and Oral Medicine taken together, not less than one-half of the marks in (1) Clinical Surgery, (2) Operative and Oral Surgery taken together, and not less than one-half of the marks in Clinical, Practical and Oral Obstetrics & Gynaecology taken together. All other candidates shall be deemed to have failed in the examination.

36. Candidates for the examination who fail but obtain passing marks in any subject, shall be exempted from re-examination in that subject.

37. Candidates who pass Parts I and II of the examination on the first occasion of appearing therefor shall be ranked in the order of proficiency as determined by the total number of marks obtained by each, in both Parts and shall be arranged in two classes; the first consisting of those who have obtained not less than seventy per cent of the aggregate number of marks, the second consisting of all the others.

Candidates who pass in the first class and who obtain not less than seventy-five per cent. of the marks in any subject shall be deemed to have passed with distinction in that subject.

Candidates who pass Part I or II of the Examination at a subsequent appearance shall be ranked only in the second class.

All candidates who pass the examination subject by subject shall be ranked in the second class separately.

38. A candidate who holds the Diploma of L.M.P. or any other qualification accepted by the Syndicate as equivalent thereto, will be admitted to the Degree of M.B. & B.S., provided—

- (a) he has passed the Diploma Examination at least five years before the date of application for Part II of the Final M.B. & B.S. Degree Examination;
- (b) he has passed the Intermediate Examination in Arts and Science of this University, or an examination accepted by the Syndicate as equivalent thereto, or an examination accepted by the General Medical Council for entrance to the Medical Course;
provided that for this purpose, the Oxford or Cambridge Senior Local or School Certificate Examination shall be recognized, if the candidate has passed with credit in any three subjects at not more than two sittings;
- (c) he has attended a course of study for not less than two academic years in a College of Medicine recognized by or affiliated to this University before appearing for Part II of the Final M.B. & B.S. Degree Examination;
- (d) he has passed Part II of the First M.B. & B.S. Examination of this University not less than one academic year previous to appearing for Part II of the Final M.B. & B.S. Degree Examination;
- (e) he has passed the Second M.B. & B.S. Examination of this University not less than one year after joining a Medical College and not

less than one academic term previous to appearing for Part II of the Final M.B. & B.S. Degree Examination; and

- (f) he passes the whole of the Final M.B. & B.S. Degree Examination of this University.

Transitory Regulations.

39. The old regulations so far as they are applicable in regard to the L.M. & S. Degree, shall continue to be applicable to those candidates who are entitled under the old regulations to these privileges.

The term "old regulations" means either the regulations which came into force on the 1st July 1926 or the regulations in force prior thereto.

Candidates who had completed their course in Pharmacology before June 1929, but did not appear for the examination in June 1929, shall be permitted to appear for the Examination in December 1929 or on any subsequent occasion without further certificates of attendance at College.

40. Candidates for the M.B. & B.S. Degree who have qualified for the L. M. & S. Degree after a five years' course shall be exempted from re-examination in the subject in which they have obtained 50 per cent. of the marks and from the production of additional attendance certificate in the other subjects.

CHAPTER LIII.

Degrees of Doctor of Medicine and Master of Surgery.

(i) *Doctor of Medicine.*

1. (a) No candidate shall be admitted to the examination for the Doctor of Medicine unless he produces a certificate showing that—
- Admission.**

- (1) he, having passed the M.B. & B.S. or M.B. & C.M. Degree Examination of this University

has been engaged for three years continuously in the practice of the Medical profession,

or

- (2) he, after qualifying for his M.B. & B.S. or M.B. & C.M. Degree, has passed two years in hospital practice,

or

- (3) he, having passed his M.B. & B.S. or M.B. & C.M. Degree Examination in the first class, has passed one year in hospital practice,

(b) Each candidate must also produce a testimonial, signed by at least two Doctors of Medicine, or two Masters of Surgery, or two members of the Senate of the University, certifying that he is in habits and character a fit and proper person to receive the degree of Doctor of Medicine.

**Branches of
Examination.**

2. Candidates shall be examined in one of the following branches:—

Branch I—Medicine.

- (a) Medicine—one paper.
- (b) Medicine, including Mental Diseases and Pathology—two papers.
- (c) A Clinical and Oral Examination, including an examination in Pathological specimens.

Branch II—Midwifery, including Diseases of Women and Children.

- (a) Medicine—one paper.
- (b) Midwifery and Diseases of Women and Children, including the Pathology of these subjects—two papers.
- (c) An essay on one of two set subjects in Midwifery and Diseases of Women and Children.
- (d) A Clinical and Oral Examination in Midwifery and Diseases of Women and Children including an examination in Pathological specimens.

Branch III.—Pathology.

- (a) Medicine—one paper.
- (b) Pathology—two papers.
- (c) A Practical and Oral Examination in Pathology.

Branch IV.—Tropical Medicine.

- (a) Medicine—one paper.
- (b) Tropical Medicine, including the Pathology of Tropical Diseases—two papers.
- (c) A Clinical and Oral Examination including the examination of Pathological specimens.

3. A candidate who has already passed the examination in one branch may, appear on a subsequent occasion in another branch, but no candidate may appear for the examination in two branches in the same year.

Candidates may qualify in two Branches

4. Candidates shall be approved by the Examiners and shall be declared to have passed if they have shown a competent knowledge in all the subjects of the examination. All other candidates shall be deemed to have failed in the examination.

Approved candidates

(ii) Master of Surgery.

5. (a) No candidate shall be admitted to the examination for the Master of Surgery unless he produces a certificate showing that,
- Admission**

(1) he, having passed the M.B. & B.S., or M.B. & C.M. Degree Examination of this University, has

- been engaged for three years, continuously in the practice of the Medical profession;

or

- (2) he, after qualifying for his M.B. & B.S. or M.B. & C.M. Degree, has passed two years in hospital practice;

or

- (3) he, having passed his M.B. & B.S., or M.B. & C.M. Degree Examination in the first class, has passed one year in hospital practice.

(b) Each candidate must also produce a testimonial, signed by at least two Doctors of Medicine, or two Masters of Surgery, or two members of the Senate of the University, certifying that he is in habits and character a fit and proper person to receive the degree of Master of Surgery.

Subjects for examination 6. Candidates shall be examined in—

- (1) Surgery—two papers.
- (2) Surgical Anatomy and Pathology—one paper.
- (3) Operative Surgery and the use of instruments.
- (4) A Clinical and Oral Examination including the examination of pathological specimens.

7. Candidates shall be approved by the Examiners and shall be declared to have passed if they have shown a competent knowledge in all the subjects of the examination. All other candidates shall be deemed to have failed in the examination.

CHAPTER LIV.

• Diploma in Midwifery (D.G.O.).

1. Candidates for the Diploma in Gynæcology and Obstetrics (D.G.O.) shall be required to have passed the M.B. & B.S. or L.M. & S. Examination of any of the Indian Universities or an Examination accepted by the Syndicate as equivalent thereto.

2. The course of study for the Diploma shall extend over a period of one year subsequent to obtaining the Medical qualifications referred to above.

Course of study

3. Every candidate shall be required:—

(a) to have served as a House Surgeon in a recognised lying-in-hospital for a period of six months;

(b) to have personally conducted at least six Obstetric Operations under the supervision of the Medical Staff of a recognised institution during this period; and

(c) to have subsequently given regular attendance for a period of six months at the Government Hospital for Women and Children, Madras, and to have attended such lectures and clinical demonstrations as may be prescribed.

There shall be given at least 20 lectures and 20 clinical demonstrations on Midwifery and Gynæcology during this period.

Instruction is given during the course in:—

Practice of Midwifery,

Practice of Gynæcology,

Anatomy of the Female Pelvis,

Elementary Embryology,

Pathology of the Female organs, and

Anti-Natal Pathology.

The examination for the Diploma is in the same subjects.

Subjects for Examination

4. At the end of the course candidates shall be examined in the following subjects:—

1. Midwifery—One paper.

2. Gynæcology and Diseases of a New Born Child—One paper.

3. A Clinical and Oral Examination in Midwifery and Gynæcology.

The examination will be very largely practical and is intended to test the student's knowledge of the practical side of Obstetrics and Gynæcology.

5. Candidates obtaining not less than one half of the marks in each of the papers and one half in the clinical and *viva voce* shall be declared to have passed in the examination. All other candidates shall be deemed to have failed.

**Marks qualify-
ing for a pass**

The following institutions shall be recognised for the House Surgeoncies:—

1. Government Hospital for Women and Children, Madras.
2. Rajah Sir Ramaswami Mudaliar's Lying-in-Hospital, Royapuram.
3. Government Victoria Caste and Gosha Hospital, Triplicane, Madras.

The examination shall be held twice a year in the months of April and October commencing from the 2nd Monday in each month.

6. The fee payable for the examination shall be Rs. 50. A candidate who fails in the examination will be admitted at the succeeding examination provided he puts in an additional course of three months.

Fees

CHAPTER LV.

Degree of Bachelor of Sanitary Science.

1. Candidates for this degree must be graduates in Medicine and Surgery of the University of Madras or hold corresponding degrees of other Universities or Licensing Bodies recognised for the purpose by the University. The degree must be registered with the Madras Medical Council before a candidate is admitted to the examination.

**Condition of
Admission**

2. The course of study shall extend over a period of not less than twelve calendar months, and shall include instruction in the subjects as hereunder:—
- Course of study**

A.—Part I.

- (i) Bacteriology (including 180 hours of practical work) extending over a period of 220 hours
- (ii) Entomology and Parasitology (including 70 hours of practical work in the laboratory and in the field, and Malaria surveys) extending over a period of 90 hours
- (iii) Chemistry and Physics in relation to Public Health (including 180 hours of practical work) extending over a period of 180 hours
- (iv) Climatology and Meteorology extending over a period of 10 hours

B.—Part II.

- (i) The Principles and Practice of Public Health (including 10 hours instruction in Maternity and Child Welfare work and organisation) extending over a period of 50 hours
- (ii) Epidemiology and Vital Statistics extending over a period of .. 20 hours
- (iii) Sanitary Law and Administration extending over a period of .. 20 hours
- (iv) Sanitary Construction and Planning (including 10 hours instruction in Town Planning and Civic Surveys) extending over a period of 30 hours

- (v) The Theory and Practice of Vaccination (including practical and outdoor work, detection and verification) extending over a period of 30 hours

- (vi) Instruction in Infectious Diseases and attendance upon the clinical practice of an Infectious Diseases Hospital extending over a period of three months, and comprising 30 attendances of two hours each on three days a week, involving a total period of 60 hours

Note.—Provision for such instruction is made in the Infectious Diseases Hospitals in Madras.

- (vii) Instruction in Public Health Administration (including the practical routine and special work of a Medical Officer of Health) extending over a period of six months, and comprising 60 attendances of three hours each under a Medical Officer of Health, involving a total period of 180 hours

Note.—This course shall comprise instruction in Maternity and Child Welfare work, the Medical Inspection of School Children, Industrial Hygiene, Inspection and control of foods and drugs.

- (viii) Instruction in Tuberculosis, clinical and administrative, extending over a period of 30 hours

- (ix) Instruction in Venereal Diseases, • clinical and administrative, extending over a period of .. 10 hours

Note.—Provision is made in the Medical College, Madras, in the City of Madras, and in the Public Health Department for instruction in the subjects set out above.

3. The course of study shall commence in July, and shall extend over four terms as follows:--

Academic Terms The Autumn term from July to the end of September; the Winter term from October to December; the Spring term from January to March; the Summer or Vacation term from April to June. The courses of study shall be taken in the Medical College, Madras, or in the appropriate institutions in Madras recognised for the purpose by the University.

4. The examination for the degree shall be conducted in two Parts and shall be held twice a year: Part I beginning on the second Monday in January or the second Monday in April respectively, and Part II beginning on the third Monday in July or the first day in December respectively.
- Division of Examination.**

5. To obtain a pass in each Part the candidates must pass in all the subjects specified in that Part at the same sitting.

6. (a) No candidate shall be admitted to the examination unless he has taken the degree in Medicine and Surgery in this University or a degree in some other University or obtained a Diploma of a Licensing Body recognised by the University as equivalent thereto and has been registered by the Madras Medical Council.

Conditions of eligibility for appearing at the Examination.

(b) A candidate for the examination shall further be required to produce with his application satisfactory evidence of his having taken a Medical Degree or obtained the Diploma specified in the preceding regulation and of his having been registered by the Madras Medical Council.

(c) A candidate shall further produce the required attendance and progress certificates for each Part.

(d) No candidate shall be admitted to Part II of the Examination unless he has passed previously Part I of the Examination, and two years had elapsed after qualifying for the Medical Degree or obtaining the Diploma.

7. Candidates shall not be deemed to have attended a course of instruction for the purposes of this degree who do not present certificates showing not only that they have regularly attended the course, but also that they have duly performed the work thereof to the satisfaction of the Professor or Lecturer in the subject concerned.

8. Candidates shall be examined in the following subjects in Part I of the examination:—

(i) Chemistry and Physics in relation to Public Health, Climatology and Meteorology.

(ii) Bacteriology.

(iii) Medical Entomology and Parasitology.

The examination in each subject shall include a written paper, practical examination and a *viva voce*.

9. Candidates who obtain not less than one half of the aggregate marks in each subject in Part I of the examination shall be declared to have passed.

10. Candidates shall be examined in the following subjects in Part II of the examination:—

(i) Hygiene and Public Health including Sanitary Engineering.

(ii) Epidemiology and Infectious Diseases.

(iii) Sanitary Law and Vital Statistics.

(iv) Public Health Administration.

The examination in subjects (i) and (iii) shall include a written paper and a *viva voce*; that in (ii) shall include a written paper, a practical examination and a *viva voce*, and that in (iv) shall consist of a practical examination only.

11. Candidates who obtain not less than one half of the aggregate marks in each subject in Part II of the examination shall be declared to have passed.

12. Candidates who pass both Parts of the examination at the first sitting and who obtain not less than two-thirds of the aggregate marks of both the Parts together shall be declared to have passed in the First Class; and candidates obtaining not less than seventy-five per cent. of the marks in any subject shall be declared to have passed with distinction in that subject. Candidates obtaining less than two-thirds of the aggregate marks and not less than 50 per cent. of the total marks shall be declared to have passed the examination in the Second Class. All other candidates shall be deemed to have failed in the examination.

**Marks qualifying
for a pass for the
whole Examination, and classification of successful candidates**

**TIME-TABLE OF THE COURSES FOR
THE B.S.Sc. MEDICAL COLLEGE DEGREE.**

I.—Autumn term (July to September.)

8—10	.. Medical Entomology and Parasitology—Daily	.. 90 hours.
12—1	.. Bacteriology Lectures—Daily except Friday	.. 40 hours.
	Climatology and Meteorology—Friday	.. 10 hours.
1—5	.. Bacteriology Laboratory work—Daily	.. 180 hours.

II.—Winter term (October to December.)

7—9	.. Vaccination—Daily in October..	30 hours
	Tuberculosis—Daily for three weeks in November	.. 30 hours.
	Venereal Diseases—Daily for one week in November	.. 10 hours.
	Maternity and Child Welfare and Propaganda—Daily for two weeks in December	.. 10 hours.
	Town Planning --- Daily for two weeks in December	.. 10 hours.

11—12	.. Principles of Public Health— Daily	.. 40 hours.
12—4	.. Public Health Chemistry Labo- ratory work—Daily	.. 180 hours.

III.—Spring term (January to March.)

7—10	.. Duties of the Medical Officer of Health and out-door demon- strations—Monday, Wednes- day, Friday	.. 90 hours.
	Infectious Diseases Hospital— Tuesday, Thursday, Saturday.	60 hours.
3—4	.. Epidemiology and Vital Statis- tics—Daily in January from the second Monday	.. 20 hours.
.	Sanitary Law and Administra- tion—Daily in February from the second Monday	.. 20 hours.
4—5	.. Sanitary Engineering—Daily in January from the second Monday	.. 20 hours.

IV.—Summer or Vacation term (April to June.)

Public Health Administration and Routine with a Medical Officer of Health	.. 90 hours.
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CHAPTER LVI—(Regulations)

Degree of Bachelor of Engineering.

1. Candidates for the degree of Bachelor of Engineering shall be required to have passed the Intermediate Examination in Arts and Science in this University or an examination in some other University accepted by the Syndicate as

**Preliminary
qualification and
duration of course.**

equivalent thereto and subsequently to have attended a Constituent or an Affiliated College of Engineering for a period of not less than four years.

They shall be further required to have passed the Bachelor of Engineering Degree Examination and to have produced evidence which shall satisfy the Syndicate that they have spent not less than one year in practical work of which at least six months shall be passed by candidates in the Civil branch on Engineering Works, by candidates in the Mechanical branch in an Engineering Workshop, and by candidates in the Electrical Branch in an Electrical Engineering Works or Power House.

First Examination in Engineering.

2. Candidates for the First Examination in Engineering shall be required to have attended a Constituent or an Affiliated college of Engineering for not less than two years and shall be examined in the following subjects:—

1. Mathematics I.
2. Mathematics II.
3. Physics.
4. Chemistry.
5. Applied Mechanics.
6. Civil Engineering I.
7. Civil Engineering II.
8. Mechanical Engineering.
9. Electrical Engineering.
10. Surveying.
11. Geometrical Drawing.
12. Building Drawing.
13. Machine Drawing.

The syllabus for the course shall be prescribed from time to time by the Academic Council on the recommendation of the Board of Studies (for syllabus *vide* **Appendix X**).

3. Candidates obtaining not less than 33 per cent in each of the following divisions and not less than 50 per cent in the aggregate shall be declared to have passed the examination. All other candidates shall be deemed to have failed in the examination. Successful candidates shall be ranked in the order of proficiency as determined by the total marks obtained by each.

The divisions shall be as follows:—

- A. 1. Mathematics I.
2. Mathematics II.
3. Physics.
4. Chemistry.
5. Applied Mechanics.
- B. 6. Civil Engineering I.
7. Civil Engineering II.
8. Mechanical Engineering.
9. Electrical Engineering.
10. Surveying.
- C. 11. Geometrical Drawing.
12. Building Drawing.
13. Machine Drawing.

Bachelor of Engineering Degree Examination.

4. Candidates for the Bachelor of Engineering Degree Examination shall be examined in one of the branches—Civil or Mechanical or Electrical. They shall be required to have passed the First Examination in Engineering and to have attended a Constituent or an Affiliated college of Engineering for a total period of not less than four years.

5. The questions set for this examination should as far as possible relate to and be drawn from Engineering practice, but must be covered by the syllabuses laid down.

**Examination—
Civil or Mechanical
or Electrical.**

**Standard of ques-
tions.**

6. Candidates in the Civil Branch shall be examined in the subjects comprised under the following question papers:—

Subjects for Civil Branch.

1. Mathematics I.
2. Mathematics II.
3. Strength of Materials and Theory of Structures I.
4. Strength of Materials and Theory of Structures II.
5. Hydraulics.
6. Structural Engineering I.
7. Structural Engineering II.
8. Highway Engineering and Railway Engineering.
9. Civil Engineering—Drawing and Design I.
10. Irrigation Engineering and Dock and Harbour Engineering.
11. Sanitary Engineering.
12. Surveying.
13. Civil Engineering—Drawing and Design II.

(For Syllabuses *vide* **Appendix X**).

Candidates shall also submit their laboratory notebooks, survey field books, drawings and designs.

7. Candidates in the Mechanical Branch shall be examined in the subjects comprised under the following question papers:—

Subjects for Mechanical Branch.

1. Mathematics I.
2. Mathematics II.
3. Strength of Materials and Theory of Structures.
4. Theory of Machines.

5. Electrical Technology I.
6. Electrical Technology II.
7. Heat Engines I.
8. Heat Engines II.
9. Machine Drawing and Design I.
10. Fuels, Gas Plants and Boilers.
11. Hydraulic Machinery.
12. Workshop Practice and Machine Tools.
13. Machine Drawing and Design II.

(For Syllabuses *vide* **Appendix X**).

Candidates shall also submit their laboratory notebooks, drawings and designs.

8. Candidates in the Electrical Branch shall be examined in the subjects comprised under the following question papers:—

**Subjects for
Electrical Branch.**

1. Mathematics I.
2. Mathematics II.
3. Strength of Materials and Theory of Structures.
4. Theory of Machines.
5. Electrical Technology I.
6. Electrical Technology II.
7. Heat Engines.
8. Principles of Electrical Machinery I.
9. Principles of Electrical Machinery II.
10. Electrical Measurements and Measuring Instruments.
11. Power Generation, Transmission and Utilization I.
12. Power Generation, Transmission and Utilization II.
13. Machine Drawing and Design.

(For Syllabuses *vide* **Appendix X**).

Candidates shall also submit their laboratory note-books, drawings and designs.

9. Candidates obtaining not less than 33 per cent in
Marks qualify- each of the following divisions and not
ing for pass. less than 50 per cent in the aggregate
Classification of shall be declared to have passed the
successful candi- examination. All other candidates
dates. shall be deemed to have failed in the examination. Success-
 ful candidates shall be ranked in the order of proficiency
 as determined by the total marks obtained by each. Candi-
 dates obtaining more than 66 per cent of the aggregate
 marks shall be declared to have passed with Honours.

The divisions shall be as follows:—

Civil Branch.

- A. Papers 1, 2, 3, 4 and 5.
- B. Papers 6, 7, 8 and 9.
- C. Papers 10, 11, 12 and 13.

Mechanical Branch.

- A. Papers 1, 2, 3 and 4.
- B. Papers 5, 6, 10 and 13.
- C. Papers 7, 8, 9, 11 and 12.

Electrical Branch.

- A. Papers 1, 2, 3 and 4.
- B. Papers 5, 6, 7 and 13.
- C. Papers 8, 9, 10, 11 and 12.

Note.—Laboratory note-books, drawings and designs, and survey field books will be valued by the Professorial staff of the college and the list of marks awarded will be sent by the Principal to the Registrar for communication to the Chairman, Board of Examiners, at the end of the college session and within a week of the termination of the University Examinations.

CHAPTER LVII.

Degree of Licentiate in Teaching.

1. No candidate shall be eligible for the Degree of Licentiate in Teaching unless he has taken a Degree in this University or a Degree in some other University accepted by the Syndicate as equivalent thereto, and has also passed the prescribed examination.

2. No candidate shall be admitted to the L.T. Degree Examination, unless he forwards before the date of the commencement of the Examination satisfactory evidence of having taken a Degree in this University or in some other University accepted by the Syndicate as equivalent thereto, and produces before the examination a certificate that he has undergone the prescribed course in a Constituent or an Affiliated Training college.

3. The course of study, which shall last for one academic year, shall include—

(i) A. B. C. The Theory and Practice of Education
Courses of Study (for syllabus *vide* **Appendix XI**).

(ii) D. Methods appropriate to the teaching of
 (1) English and (2) one of the following subjects:—

- (a) Child Education,
- (b) Mathematics,
- (c) Physical Science,
- (d) Natural Science,
- (e) History,
- (f) Geography,
- (g) One Language other than English,
 and
- (h) Domestic Science. (For Syllabuses,
vide **Appendix XI**).

- (iii) A special subject to be prescribed from time to time.
- (iv) Candidates shall also undergo a course in practical training including instruction in school management and practice in teaching.

Scheme of Examination.

4. The subjects and the scheme of examination shall be as follows:—

1. Theory and Practice of Education A. B. C. I—3 hours.
2. Theory and Practice of Education A. B. C. II—3 hours.
3. Special Subject—1½ hours.
4. Theory and Practice of Education. Methods of Teaching, (D-1) English—3 hours.
5. Theory and Practice of Education, Methods of Teaching, (D-2) optional subject—one of the following:—3 hours.

Child Education,
Mathematics,
Physical Science,
Natural Science,
History,
Geography,
Language other than English,
Domestic Science.

5. A candidate shall be declared to have passed the examination, if he obtains—(a) not less than 30 per cent. of the marks in the subject for Special Study and not less than 35 per cent. in the subject for Special Study and Theory and Practice of Education A. B. C. I and II taken together, and (b) not less than 35 per cent. in each of the other two papers—D. 1—English, and D. 2—optional subject—and not less than 40 per cent. in the two papers taken together. All other candidates shall be deemed to

have failed in the examination. Of the successful candidates those who obtain not less than 60 per cent. of the total marks shall be placed in the First Class and those who obtain not less than 50 per cent. of the total marks shall be placed in the Second Class. The remaining successful candidates shall be placed in the Third Class. Successful candidates who obtain not less than 60 per cent. of the marks in the paper relating to D-(1) or the paper relating to D-(2) shall be declared to have obtained distinction in that subject.

6. Notwithstanding anything contained in Regulation 2 above, about the duration of the prescribed course, it shall be competent for the Syndicate to admit to the L.T. Degree Examination certificated *bona fide* trained teachers who have passed the B.A. Degree Examination and who have undergone a course of instruction in a Constituent or an affiliated training college for Teachers during the third term and attended a vacation course conducted by a constituent or an affiliated training college for Teachers and who satisfy the general rules relating to the grant of exemption to *bona-fide* certificated trained teachers prescribed by the Syndicate for admission to Matriculation, Intermediate and B.A. Degree Examinations.

CHAPTER LVIII.

Degree of Bachelor of Science in Agriculture.

1. Candidates for the Degree of Bachelor of Science in Agriculture (B.Sc. Ag.) shall be required--

(1) to have passed (a) the Intermediate Examination in Arts and Science of this or some other recognized University, having offered as optionals, Chemistry and any two of the following subjects:—

Mathematics, Physics, Natural Science, Botany, Zoology including Human Physiology, and Agriculture;

or (b) an examination accepted by the Syndicate as equivalent thereto.

- (2) to have undergone subsequently a **further** course of study in agriculture extending over three years at a college of Agriculture recognised by or affiliated to this University, and to have passed the examination for the Degree hereinafter prescribed.

Course of study 2. The course of study in Agriculture shall comprise both theoretical and practical instruction in the following subjects:—

- (i) Agriculture.
- (ii) Agricultural Botany.
- (iii) Agricultural Chemistry.
- (iv) Agricultural Zoology.
- (v) Agricultural Engineering.
- (vi) Animal Hygiene.

Syllabus. 3. The syllabus of studies under each of the above subjects shall be prescribed from time to time by the Academic Council on the recommendation of the Board of Studies in Agriculture. (For Syllabus, *vide* **Appendix XII**).

Examinations.

4 For the Degree of B.Sc. in Agriculture there shall be three examinations. No candidate shall be eligible for the Degree unless he has completed the course of study prescribed and passed all the examinations.

5. The examination in each subject shall be both written and practical. In conjunction with each practical examination there may be an oral examination of each candidate. Each candidate shall produce his laboratory and field note books at the time of the practical examination.

6. The First Examination shall be held at the end of First year of the course of study and shall be in the following subjects:—

- (i) Agriculture.
- (ii) Botany.
- (iii) Chemistry.
- (iv) Zoology.

7. The Second Examination shall be held at the end of the Second year of the course of study and shall be in the following subjects:—

- (i) Agriculture- -Plant Husbandry.
- (ii) Agricultural Engineering.
- (iii) Agricultural Zoology.
- (iv) Animal Hygiene.

8. The Final Examination shall be held at the end of the Third year of the course of study and shall be in the following subjects:—

- (i) Agriculture -Economics and Farm Management.
- (ii) Agriculture- -Animal Husbandry
- (iii) Agricultural Botany.
- (iv) Agricultural Chemistry.

9. No candidate will be permitted to appear for the Examination unless he produces a certificate of having completed the prescribed course.

10. No candidate shall be permitted to appear for the second examination unless he has passed the first examination.

11. A candidate who fails in not more than one subject in the second examination will be permitted to appear for the final examination as well as for the examination in the subject in which he has failed.

12. A candidate shall be declared to have passed the first examination if he obtains not less than 40 per cent. of the marks in each of the four subjects prescribed for the examination.

**Marks qualifying
for a pass**

13. A candidate shall be declared to have passed the second examination if he obtains not less than 40 per cent of the marks in each of the four subjects prescribed for the examination.

14. A candidate shall be declared to have passed the final examination if he obtains not less than 40 per cent of the marks in each of the four subjects prescribed for the examination.

15. A candidate who obtains 40 per cent. in any subject in the Second or Final examination shall be declared to have passed in that subject. Any candidate who passes the Second and Final examinations at the first appearance with 60 per cent. of the total marks in each examination shall be declared to have passed in the First Class. All other successful candidates shall be declared to have passed in the Second Class. Any candidate who obtains a pass in the Second or Final Examination at the first appearance and secures not less than 75 per cent. of the marks in any subject shall be declared to have passed with distinction in that subject. With regard to Agriculture, however, the marks of the Second and Final examinations will be considered together for the award of distinction.

Successful candidates at the final examination shall be ranked in the order of merit.

16. Candidates who fail in the First Examination will be permitted to appear at any subsequent examination on payment of the prescribed fees and need not produce any additional attendance certificate.

Candidates who fail in any of the subjects in the Second and Final Examinations will be permitted to appear in such subjects at any subsequent examination on payment of the prescribed fees and need not produce any additional attendance certificate.

17. The Examination for the B.Sc. Ag. Degree under the Regulations in force prior to the academic year 1932-33, shall be held till the end of the academic year 1934-35, for the benefit of those candidates who have completed their courses of study or were undergoing their

Transitory Regulation.

courses of study in the year 1931-32 under the above Regulations.

CHAPTER LIX.

Degree of Bachelor of Veterinary Science

*(B. V. Sc.).

Eligibility for admission to B.V.Sc. 1. Candidates for the Degree of Bachelor of Veterinary Science (B.V.Sc.) shall be required—

(1) to have passed the Intermediate Examination in Arts and Science of this University, taking either Chemistry or Natural Science as one of the optional subjects, or an examination accepted as equivalent thereto by the Syndicate;

(2) to have subsequently studied for a period of three years and one term (consisting of 10 academic terms) in a College of Veterinary Science recognised by or affiliated to this University;

(3) to have passed the B.V.Sc. Preliminary, Intermediate and Final Examinations.

Duration of the course. 2. The course for the Degree of B.V.Sc. shall extend over a period of three years and one term, consisting of ten academic terms (ordinarily consecutive). The curricula and syllabuses for the course shall be prescribed from time to time.*

Examinations The examinations for the degree shall consist of a Preliminary Examination, an Intermediate Examination and a Final Examination.

* For Syllabus and Text-books *vide* APPENDIX XIII.

B.V.Sc. Preliminary.

3. A candidate for this examination shall undergo a course of instruction in the following
Course of study. subjects extending over an academic year:—

(a) Biology.

(b) Chemistry.

The candidates shall be examined in each of the above subjects. The examination in Biology shall consist of written and oral parts; and that in Chemistry written, practical and oral parts.

4. Candidates who have passed the Physical or Natural Science group of the B.A., B.Sc., B.Sc. (Honours) or B.A. (Honours) Degree Examination of this University with Chemistry or Zoology as their main optional subject or an examination of any other Indian University accepted by the Syndicate as equivalent thereto, shall be exempted from undergoing the course and the examination in the respective subjects in which they have passed the Degree examination. Such candidates shall, however, be required to pay the fee prescribed for the whole examination.

5. Candidates for the examination shall be declared to have passed the examination if they
Passing minimum. obtain not less than one half of the marks in the written parts and not less than one half of the marks in the oral part in Biology, and not less than one half of the marks in the practical and oral parts in Chemistry taken together. All other candidates shall be deemed to have failed in the examination.

6. Candidates who fail in the examination, but obtain the prescribed minimum marks for a pass in any subject shall be exempted from re-examination in that subject.

Examination by subjects.

7. Candidates who pass the whole examination at their first appearance shall be arranged in two classes—the first consisting of those who obtain not less than 75 per cent. of the total marks and the second consisting of others. They shall be arranged in either class in the order of their total marks.

Classification of successful candidates.

B.V.Sc. Intermediate.

8. The course for the B.V.Sc. Intermediate shall extend over a period of one academic year. No candidate shall be admitted to the examination unless he has previously passed the B.V.Sc. Preliminary examination and undergone a course of instruction in the prescribed subjects, viz —

Course of study.

- (a) Physiology, including Experimental Physiology, Histology and Biochemistry, etc..
- (b) Pathology, including Bacteriology and Immunology.
- (c) Parasitology, including Proto-Zoology.

9. Candidates for the examination shall be examined in each of the above subjects and the examination in each subject shall consist of written, practical and oral parts.

Examination

10. Candidates shall be declared to have passed the Intermediate examination if they obtain in each subject not less than one half of the marks in the written parts and not less than one half of the marks in practical and oral parts taken together. All other candidates shall be deemed to have failed in the examination.

Candidates who pass the whole examination at their first appearance shall be arranged in two classes the first consisting of those who have obtained not less than 75 per cent. of the total number of marks and the second

Classification of successful candidates.

consisting of all others. They shall be arranged in either class in the order of their total marks.

11. Candidates who fail in the examination but obtain the prescribed minimum marks for a pass in any subject shall be exempted from re-examination in that subject.

12. Candidates who complete the examination by passing subject by subject shall be placed in a separate group in the second class.

B.V.Sc. Final.

13. Candidates appearing for this examination shall undergo a course of study in the following subjects, extending over a period of four academic terms, ordinarily consecutive:—

(a) Preventive Medicine.

(b) Meat and Milk Inspection.

(c) Hygiene.

Candidates shall be examined in each of the above subjects and the examination in each subject shall consist of a written and an oral part.

14. No candidate shall be admitted to the Final Examination, unless he has passed the B.V.Sc. Preliminary and Intermediate Examinations and has also obtained the Diploma in Veterinary Science awarded to the students of the Veterinary College by the Government of Madras or a Diploma awarded by any other recognised body and accepted by the Syndicate as equivalent thereto and has pursued a course of study in the prescribed subjects.

15. Candidates for the examination shall be declared **Passing minimum** to have passed the examination if they obtain in each subject not less than one half of the marks in the written parts and not less than one half of the marks in the oral parts. All other candidates shall be deemed to have failed in the examination.

16. Candidates who pass the whole examination at their first appearance shall be arranged in two classes, the first consisting of those who have obtained not less than 75 per cent. of the total marks and the second consisting of all others. They shall be arranged in either class in the order of their total marks.

17. Candidates who fail in the examination but obtain the prescribed minimum marks for a pass in any subject shall be exempted from re-examination in that subject.

18. Candidates who complete the examination by passing subject by subject shall be placed in a separate group in the second class.

Note.—For Scheme of Examination, please see APPENDIX XIII.

CHAPTER LX.

Degree of Bachelor of Commerce.

Eligibility for Com. Degree. 1. Candidates for the Degree of Bachelor of Commerce (B.Com.) shall be required—

- (1) to have passed the Intermediate Examination in Arts and Science of this University taking as optional subjects under Part III Elements of Commerce and Accountancy and any two of the following subjects; namely (a) Economic History of England and Economic Geography, (b) Modern History, (c) Indian History, (d) Logic, (e) Mathematics.

or

an examination of some other University recognised by the Syndicate as equivalent thereto;

(2) to have undergone subsequently a further course of study in Commerce extending over a period of three academic years at a College of Commerce recognised by or affiliated to the University and

(3) to have passed the examinations for the degree prescribed in the regulations following.

2. The course of study for the B.Com. Degree Examination shall comprise instruction in the following subjects according to a syllabus to be prescribed from time to time.

Course of study.

Compulsory Subjects:

English:—

1. Essay with Bibliography.
2. Precis Writing: Business Correspondence.
3. A Second Language; Translation from either Hindi, French or German.
4. Principles of Economics.
5. Present Organisation of Industry and Trade.
6. Currency and Banking, International Trade and Foreign Exchanges.
7. Statistical Methods and Applications.
8. Elements of Commercial Law.
9. Recent Economic History.
10. Economic Geography.

Optional Subjects:

One of the following groups of optional subjects:—

(a) (i) Advanced Accounting and Auditing.

(ii) Mercantile Law.

(b) (i) Advanced Banking Theory.

(ii) Banking Law and Practice.

- (c) (i) International Trade and Tariffs.
(ii) Transport.
- (d) (i) Public Finance.
(ii) Public Administration.
- (e) (i) Rural Economics.
(ii) Co-operation.
- (f) (i) Insurance and Annuities.
(ii) Insurance (Mathematical).

3. The Examination shall be by means of written papers and there shall be one paper in each of the compulsory subjects (1 to 10) and one paper in each of the two subjects in the optional group chosen by the candidates. Each paper shall be of three hours' duration.

The examination shall be in two parts, **Preliminary** and **Final**.

The Preliminary Examination shall be held at the end of the first year of the course and the examination shall be in the following subjects:—

- Precis Writing and Business Correspondence.
- Statistical Methods and Applications.
- Present Organisation of Industry and Trade.
- Economic Geography.

The Final Examination shall be held at the end of the third year and the examination shall be in the other compulsory subjects and the optional group.

4. No candidate shall be admitted to the Preliminary Examination unless he has qualified as required in Regulation (1) *supra* and has undergone the prescribed course in an affiliated or recognised institution and has produced the required certificate of attendance and progress for one year.

5. No candidate shall be admitted to the Final Examination unless he has passed the Preliminary Examination and has undergone the prescribed course in an affiliated or recognized institution and has produced the prescribed certificates of attendance and progress for two academic years after his first appearance for the Preliminary Examination.

6. A candidate shall be declared to have passed the Preliminary Examination if he obtains not less than 30 per cent. of the marks in each paper for the examination and not less than 40 per cent. of the marks in the aggregate. All other candidates shall be deemed to have failed in the examination.

7. A candidate shall be declared to have passed the Final Examination if he obtains 30 per cent. of the marks in each paper in the remaining compulsory subjects, 35 per cent. of the marks in the two papers in the subjects of the optional group chosen by the candidate and 40 per cent. of the marks in the aggregate (both compulsory and optional subjects). All other candidates shall be deemed to have failed in the examination.

8. Successful candidates shall be ranked in the order of proficiency as determined by the total marks obtained by each at the Final Examination and shall be arranged in three classes.

The *first* consisting of those who obtain not less than 60 per cent. of the total marks; the *second* of those who obtain less than 60 per cent. but not less than 50 per cent. of the total marks; the *third* of those who obtain less than 50 per cent. but not less than 40 per cent. of the total marks.

Candidates who obtain not less than two-thirds of the marks in any subject shall be declared to have passed with distinction in that subject.

CHAPTER LXI.

**Titles. Certificates of Proficiency and Degrees in
Oriental Learning.***(Revised Regulations.)*

1. There shall be examinations in the subjects in
Oriental Learning qualifying for Titles,
Examinations Certificates of Proficiency, and Degrees
in the Faculty of Oriental Learning as
in Regulations *infra*.

2. The following shall be the Titles awarded:—

(a) Siromani (added to Mimamsa, Vedanta,
Nyaya, Vyakarana, Sahitya, Jyotisha or
Ayurveda).

(b) Vidvan.

(c) Afzal-ul-Ulama.

Titles. (d) Munshi-i-Fazil.

(e) Adib-i-Fazil.

(f) Tabib-i-Kamil.

(g) Afzal-ul-Atibba.

(h) Malpan.

(i) Soppar.

3. Candidates for the *Siromani* title shall offer
Subjects for their examination Sanskrit alone;
and those for the *Vidvan* title either

(a) Sanskrit and any one of the following languages:—
Tamil, Telugu, Kannada, Malayalam, Oriya, Marathi or
Hindi, or (b) Tamil, Telugu, Kannada, Malayalam, Oriya,
Marathi or Hindi as the Main language with Sanskrit as a
Subsidiary language, or (c) any two of the Dravidian
languages—Tamil, Telugu, Kannada or Malayalam, or
(d) Tamil alone.

Candidates for Afzal-ul-Ulama title shall offer Arabic
alone. Those for Munshi-i-Fazil shall offer Persian as
the main language and Urdu as the subsidiary

language. Candidates for Adib-i-Fazil shall offer Urdu as the main language and Persian or Tamil or Malayalam as the subsidiary language.

Candidates for Tabib-i-Kamil who have offered for the examination Tibb-i-Unani (Unani Medicine) in Persian and Urdu shall offer Persian as the main language and Urdu as the subsidiary language while those for Afzal-ul-Atibba who have offered for the examination Tibb-i-Unani (Unani Medicine) in Arabic and Urdu shall offer Arabic as the main language and Urdu as the subsidiary language.

Candidates for the Malpan Title shall offer for their examination Syriac alone; and those for the Soppar Title shall offer Syriac as the main language and Hebrew as the subsidiary language.

4. The course of studies for the examination for Titles shall extend over four academic years and shall be pursued in an institution or institutions approved by the Syndicate.

Course of Studies—duration.

5. The examination for Titles shall be divided into two parts, viz.—preliminary and final—the preliminary examination in a specified portion of the course at the end of the second year and the final in the remaining portion of the course at the end of the fourth year. No candidate shall be admitted to the final examination until he has passed the preliminary examination.

Examination—Preliminary and Final

6. *Sirōmani*—

**Sirōmani—
Course of
Studies for**

1. The course of studies shall be as follows:—

A. *General.*

(a) The History of Sanskrit Language and Literature.

(b) Prescribed text-books,

B. A Special Subject.

For the preliminary examination, the course in the general part shall comprise—

- (a) Prescribed text-books relating to the elements of Tarka, Mimamsa and Vyakarana;
- (b) Prescribed text-books chosen from among the Mantras, the Brahmanas, the Upanishads, the Grhya and Dharma Sutras and the Smritis.

For the final examination, the course in the general part shall comprise the History of Sanskrit Language and Literature.

The course in the special part shall consist of one of the following branches of study taken by the candidate:—

BRANCH I.—*Mimamsa Group.*

For the preliminary examination, prescribed text-books relating to Purvamimamsa, Veda, Srauta and Dharma-sastra.

For the final examination, (a) prescribed text-books relating to Purvamimamsa; (b) The application of Mimamsa to Vedic exegesis and to the proper comprehension of the social and the legal aspects of the Dharma-sastras.

BRANCH II.—*Vedanta Group.*

For the preliminary examination, prescribed text-books relating to the *Bhashya Prasthanā* of one of the three South Indian Schools of Vedanta, viz.—Advaita, Viśiṣṭadvaita and Dvaita.

For the final examination, (a) prescribed text-books relating to the *Vada Prasthanā* of one of the three South Indian Schools of Vedanta; and (b) prescribed text-books relating to Yoga, Sankhya and the elements of the three South Indian Schools of Vedanta.

There shall be two papers on the books prescribed under (a) and one paper on the books prescribed under (b).

BRANCH III.—*Nyaya Group.*

For the preliminary examination, prescribed text-books relating to the Nyaya and Vaisesika Darsanas including select portions of Purvavada.

For the final examination, prescribed text-books relating to Nyaya and Vaisesika Darsanas including select portions of Uttaravada and of the Sabdabodha works in Nyaya and Mimamsa.

BRANCH IV.—*Vyakarana Group.*

For the preliminary examination, prescribed text-books relating to advanced Vyakarana, including select portions of standard commentaries on the *Siddhantakaumudi*.

For the final examination, prescribed text-books relating to advanced Vyakarana, including Sabdabodha works in Vyakarana and select portions of the *Mahabhasya* and standard commentaries on the *Siddhantakaumudi*.

BRANCH V.—*Sahitya Group.*

For the preliminary examination, prescribed Kavyas and Natakas and a simple work in Poetics.

For the final examination, (a) prescribed text-books relating to Grammar, Prosody and Poetics; and (b) prescribed text-books of an advanced character, relating to Alankara Sastra.

N.B.—The first paper on the text-books prescribed for the Sahitya Siromani final examination shall be identical with paper (1) comprised in the Vidvan final examination and shall be on the text-books prescribed under (a) for the Sahitya Siromani final examination, a lower standard than that of the Sahitya Siromani being required in the case of Vidvan candidates. The second and third papers on text-books for the Sahitya Siromani final examination shall be on those prescribed therefor under (b).

BRANCH VI—*Jyotisha Group.*

For the Preliminary Examination.—Prescribed books in Jyotisha and Ganita.

For the Final Examination.—Prescribed books of an advanced character in Jyotisha and Ganita.

BRANCH VII.—*Ayurveda Group.*

For the Preliminary Examination.—Prescribed books in Ayurveda and a certificate of having attended the practice of a Hospital for one year under an Ayurvedic Physician.

For the Final Examination.—Prescribed books of an advanced character in Ayurveda and a certificate of having attended the practice of a Hospital for 2 years under an Ayurvedic Physician.

Vidvan—Course of Studies for 7. The course of studies for Vidvan Title shall be as follows:—

A. *Vidvan with Sanskrit.*

(i) *Sanskrit*—

The course shall be—

For the preliminary examination, prescribed Kavyas, Natakas, a simple work in Poetics and a prescribed portion in Grammar. The text-books prescribed under this head shall, as far as possible, be the same as those prescribed for the Sahitya Siromani preliminary examination.

For the final examination, (a) History of Sanskrit Language and Literature; and (b) prescribed text-books relating to Grammar, Prosody and Poetics. The text-books prescribed under this head shall, as far as possible, be the same as those prescribed under (a) for the Sahitya Siromani final examination.

(ii) *Selected Indian Language*—

The course shall be—

For the preliminary examination, (a) prescribed text-books in Poetry and Prose; and (b) Composition in the Indian language.

For the final examination, prescribed text-books relating to Grammar, Prosody and Poetics.

B. *Vidvan*—with Tamil, Telugu, Kannada, Malayalam, Oriya, Marathi or Hindi as the main language and Sanskrit as a subsidiary language.

(i) *Selected Indian Language*—

The course shall be—

For the preliminary examination, (a) prescribed text-books in Poetry and Prose; (b) prescribed text-books relating to Grammar; and (c) Composition.

For the final examination, (a) prescribed text-books in Poetry; (b) prescribed text-books relating to Advanced Grammar, Prosody and Poetics; (c) History of Language and Literature.

(ii) *Sanskrit*—

The course shall be—

For the preliminary examination, (a) prescribed text-books in simple Poetry and Prose; (b) Elementary Grammar taught in relation to (a); (c) Translation from Sanskrit into the selected Indian Language.

For the final examination, (a) prescribed text-books in Kavyas and Natakas; (b) Elementary Prosody and Poetics taught in relation to (a).

*C. *Vidvan*—two Dravidian Languages.

The course in each Dravidian language, the text-books prescribed and the examination therein shall be identical with those prescribed for the same language when offered along with Sanskrit for the Vidvan title; provided that a candidate who offers two Dravidian languages shall, at the

*The course of study for the Vidvan Title under Regulation 7-A and C in Telugu shall include Lakshanagranthas (Grammar, Prosody and Poetics) along with Lakshyagranthas (Literature, Kavya and Prabhandhas) for Preliminary and Final Examinations. For books vide APPENDIX XIV.

end of the second year of his course, take his preliminary examination in one of the two Dravidian languages by answering all the three question papers in that language as set forth in Regulation 10 (ii) *infra* for the preliminary and final examinations, and that he shall, at the end of the fourth year of his course, take his final examination in the other Dravidian language by adopting a similar procedure.

D. *Vidvan—Tamil alone.*

The course shall be—

For the preliminary examination, (a) prescribed text-books in Poetry and Prose; (b) prescribed text-books relating to Grammar; (c) Composition; and (d) History of the Tamil Country.

For the final examination, (a) prescribed text-books in Poetry; (b) prescribed text-books relating to Advanced Grammar, Prosody and Poetics; (c) History of Language and Literature; and (d) Inscriptions.

8. The courses of studies for the Titles in Arabic, Persian and Urdu shall be as follows:—

(i) AFZAL-UL-ULAMA.

The following shall be the course of study in Arabic for the title of Afzal-ul-Ulama Examination:—

(A)—*Preliminary.*

The course of study shall consist of—

- (1) Tafsir, Hadith and Usul-i-Hadith.
- (2) Fiqh, 'Aqaa'id and Mantiq.
- (3) Prose text-books.
- (4) Poetry text-books.
- (5) History.
- (6) Translation from Arabic into Urdu or Tamil or Malayalam and *vice versa*.
- (7) Grammar, Rhetoric and Prosody.

(B)—*Final*.

The course of study shall consist of—

- (1) Tafsir, Hadith and 'Ilmul Hadith.
- (2) Fiqh, Usul-ul-Fiqh and 'Ilmul Kalam.
- (3) Prose text-books.
- (4) Poetry text-books.
- (5) History.
- (6) Translation from Arabic into Urdu or Tamil or Malayalam and *vice versa*.
- (7) Mantiq, Falsafah, and Balaghat.
- (8) Composition in Arabic.
- (9) History of Arabic Language and Literature.

Note.—Candidates for the examination in Afzal-ul-Ulama title, if their mother tongue happens to be Tamil or Malayalam may offer their respective languages for the paper on Translation. The fact will be noted in their Diplomas.

(ii) MUNSHI-I-FAZIL.

The following shall be the course of study for Munshi-i-Fazil Examination:—

A.—*Preliminary*.

PART I.—PERSIAN.

- (1) Persian Prose Text-books.
- (2) Persian Poetry Text-books.
- (3) Composition in Persian on general topics as well as on subjects selected from text-books prescribed for non-detailed study.
- (4) Grammar, Rhetoric and Prosody.
- (5) Islamic History.

PART II.—URDU.

- (6) Composition in Urdu on general topics as well as on subjects selected from text-books prescribed for non-detailed study.
- (7) Translation from Persian into Urdu and *vice versa*.

B.—*Final*.

PART I.—PERSIAN.

- (1) Persian Prose Text-books.
- (2) Persian Poetry and Literary Criticism.
- (3) Composition in Persian on general topics as well as on subjects selected from text-books prescribed for non-detailed study.
- (4) History of Persian Language and Literature.
- (5) Islamic History.
- (6) Grammar, Rhetoric and Prosody.

PART II.—URDU.

- (7) Composition in Urdu on general topics and on subjects selected from the text-books prescribed for non-detailed study.
- (8) Translation from Persian into Urdu and *vice versa*.

(iii) ADIB-I-FAZIL.

The following shall be the course of study for Adib-i-Fazil Examination:—

A.—*Preliminary*.

PART I.—URDU.

- (1) Urdu Prose Text-books.
- (2) Urdu Poetry.

- (3) Composition in Urdu on general topics as well as on subjects selected from the text-books prescribed for non-detailed study.
- (4) Grammar, Rhetoric and Prosody.
- (5) Islamic History.

PART II—PERSIAN, TAMIL OR MALAYALAM.

- (6) Composition in Persian, Tamil or Malayalam on general topics as well as on subjects selected from the text-books prescribed for non-detailed study.
- (7) Translation from Urdu into Persian, Tamil or Malayalam and *vice versa*.

B.—*Final*.

PART I—URDU.

- (1) Urdu Prose text-books.
- (2) Urdu Poetry and literary criticism.
- (3) Composition in Urdu on general topics as well as on subjects selected from the text-books prescribed for non-detailed study.
- (4) History of Urdu Language and Literature
- (5) Islamic History.
- (6) Grammar, Rhetoric and Prosody.

PART II—PERSIAN, TAMIL OR MALAYALAM.

- (7) Composition in Persian or Tamil or Malayalam on general topics as well as on subjects selected from text-books prescribed for non-detailed study.
- (8) Translation from Urdu into Persian or Tamil or Malayalam and *vice versa*.

(iv) TABIB-I-KAMIL.

The following shall be the course of study for Tabib-i-Kamil Examination:—

A.—*Preliminary.*

Prescribed books in Tibb-i-Unani in Persian and Urdu and a certificate of having attended the practice of a recognised Unani Hospital or dispensary for two years under a recognised Unani Physician.

B.—*Final.*

Prescribed books of an advanced character in Tibb-i-Unani in Persian and Urdu and the certificate of having attended the practice of a recognised Unani Hospital or dispensary for three years under a recognised Unani Physician.

(v) AFZAL-UL-ATIBBA.

The following shall be the course of study for Afzal-ul-Atibba Examination:—

A.—*Preliminary.*

Prescribed text-books in Tibb-i-Unani in Arabic and Urdu and a certificate of having attended the practice of a recognised Unani Hospital or dispensary for two years under a recognised Unani Physician.

B.—*Final.*

Prescribed books of an advanced character in Tibb-i-Unani in Arabic and Urdu and a certificate of having attended the practice of a recognised Unani Hospital or dispensary for three years under a recognised Unani Physician.

The prescribed text-books shall comprise the following subjects:—

- (1) Kulliyath and Kimiyah.
- (2) Tashrihul A'za wa Manafi'ul A'za.

- (3) 'Ilmul Adwiyah and 'Ilmus Saydalah.
- (4) Tarikhut-Tib.
- (5) 'Ilmul Tashkhis.
- (6) 'Ilmul Amrad wal Jarathim.
- (7) Tibb-i-Qununi.
- (8) Mu'alijat.
- (9) 'Ilmul Qabilah.

9. The courses of studies for the Titles in Hebrew and Syriac shall be as follows:—

MALPAN.

Malpan—Course of studies for. The following shall be the course of studies in Syriac for the Examination for the Title of Malpan:—

A. Preliminary.

The course of study shall consist of—

- 1. Prose Text-books.
- 2. Poetry Text-books.
- 3. History of the Syriac Language and Literature.
- 4. Translation from Syriac into English and from English into Syriac.
- 5. Composition in Syriac.

B. Final.

The course of study shall consist of—

- 1. Prose Text-books.
- 2. Poetry Text-books.
- 3. History of the Syriac Language and Literature.
- 4. Translation from Syriac into English and from English into Syriac.
- 5. Composition in Syriac.

Questions on Grammar may be put in the examination papers on the text-books.

SOPPAR.

The following shall be the course of studies for the examination for the Title of Soppar:—

A. Preliminary.

**Soppar—Course
of studies for.**

The course of study shall consist of
Syriac as the Main Language and
Hebrew as a Subsidiary Language.

Syriac as the Main subject shall include—

1. Syriac Prose.
2. Syriac Poetry.
3. Translation from Syriac into English and from English into Syriac.
4. Composition in Syriac.

Hebrew as a Subsidiary subject shall include—

1. Hebrew Prose.
2. Hebrew Poetry.

Questions on Grammar may be put in the examination papers on the text-books.

B. Final.

The course of study shall consist of Syriac as the main language and Hebrew as a subsidiary language.

Syriac as the main subject shall include—

1. Syriac Prose.
2. Syriac Poetry.
3. Translation from Syriac into English and from English into Syriac.
4. Composition in Syriac.

Hebrew as a subsidiary subject shall consist of—

1. Hebrew Prose.
2. Hebrew Poetry.

Questions on Grammar may be put in the examination papers on the text-books.

10. *Scheme of Examination*:—The scheme of examination for the several Titles shall be as follows:—

(i) *Siromani*—

(a) In the preliminary examination there shall be in the general part two papers on the prescribed text-books; and, in the special part, two papers on the prescribed text-books.

(b) In the final examination there shall be in the general part one paper on the History of Sanskrit Language and Literature and in the special part there shall be three papers on the prescribed text-books.

The scheme of examination shall be as follows:—

*Mimamsa, Vedanta, Nyaya, Vyakarana, Sahitya,
Jyotisha or Agurveda Siromani.*

Preliminary.

Subjects.	Hours.	Marks.
Prescribed Text-books (I) General ..	3	200
Prescribed Text-books (II) General ..	3	200
Prescribed Text-books—Special (I) ..	3	150
Prescribed Text-books—Special (II) ..	3	150
Total ..		<hr/> 700 <hr/>

Final.

Subjects.	Hours.	Marks.
History of Sanskrit Language and Literature. ..	3	200
Prescribed Text books—Special (I) ..	3	200
Prescribed Text-books—Special (II) ..	3	200
Prescribed Text-books—Special (III) ..	3	200
Total ..		<hr/> 800 <hr/>

(ii) *Vidvan*—(under Regulation 7-A).—

(a) In the preliminary examination there shall be—

- (i) One paper on the prescribed text-books relating to the selected Indian Language,
- (ii) One paper in Composition in the selected Indian Language; and
- (iii) Two papers on the prescribed Sanskrit text-books.

The last-mentioned papers shall, as far as possible, be the same as the papers on the text-books prescribed for the preliminary examination under the special part of the Sahitya Siromani course, such questions on the prescribed text in Grammar as may be placed in these papers being required to be answered by the Vidvan candidates only. A lower standard than that of the Sahitya Siromani shall be required in the case of the Vidvan candidates.

• (b) In the final examination, there shall be—

- (i) A paper on the prescribed Sanskrit text-books.

N.B.—This paper shall be the same as that for the Sahitya Siromani final examination on the text-books prescribed under (a) for that examination; a lower standard than that of the Sahitya Siromani being required in the case of Vidvan candidates.

- (ii) A paper on the History of the Sanskrit Language and Literature.

N.B.—This paper shall be the same as the corresponding paper for the Siromani examination, a lower standard than that of Siromani being required in the case of Vidvan candidates.

- (iii) A paper on the prescribed text-books relating to Grammar, Prosody and Poetics in the selected Indian language.

The scheme of examination shall be as follows:—

Preliminary.

Subjects.	Hours.	Marks.
Prescribed Text-books in the selected Indian Language	3	200
Composition in the selected Indian Language	3	200
Prescribed Sanskrit Text-books (I) ..	3	150
Prescribed Sanskrit Text-books (II) ..	3	150
Total ..		700

Final.

Subjects.	Hours.	Marks.
History of Sanskrit Language and Literature	3	200
Prescribed Sanskrit Text-books ..	3	200
Prescribed Text-books in the selected Indian Language	3	200
Total ..		600

(iii) *Vidvan*—(under Regulation 7-B).—

- (i) In the preliminary examination in the selected Indian language there shall be two papers on the prescribed text-books in Poetry and Prose and those relating to Grammar and one paper on Composition. In Sanskrit there shall be one paper of two parts, the first containing questions on Sanskrit Grammar and Poetry and Prose text-books and the second containing passage or passages for translation from Sanskrit into the selected Indian language.
- (ii) In the final examination in the selected language there shall be one paper on Poetry text-books, one paper on text-books relating to Advanced Grammar, Prosody and Poetics, and one paper on History of Language and Literature. In Sanskrit there shall be one paper containing questions on text-books.

The standard required in Sanskrit shall not be higher than that required for that language taken as an optional subject in Part II of the Intermediate Examination.

The scheme of examination shall be as follows:—

Preliminary.

Subjects.	Hours.	Marks.
Prescribed Text-books (I) in the selected Indian language	3	175
Composition in the selected Indian language	3	150
Prescribed Text-books (II) in the selected Indian language	3	175
Sanskrit Text-books and Translation ..	3	100
Total ..		600

Final.

Subjects.	Hours.	Marks.
Prescribed Text-books (I) in the selected Indian language	3	175
Prescribed Text-books (II) in the selected Indian language	3	175
History of Language and Literature in the selected Indian language ..	3	150
Sanskrit Text-books	3	100
Total ..		600

(iv) *Vidvan*—(under Regulation 7-C).—

The scheme of examination shall be as follows:—

First Language.—

Preliminary.

Subjects.	Hours.	Marks.
Prescribed Text-books in the selected Indian language	3	200
Composition in the selected Indian language	3	200

Final.

Prescribed Text-books in the selected Indian language	3	200
Total ..		600

*Second Language.—**Preliminary.*

Subjects.					Hours.	Marks.
Prescribed Text-books in the selected Indian language	..	..	..	..	3	200
Composition in the selected Indian language	..	..	..	..	3	200

Final.

Prescribed Text-books in the selected Indian language	..	..	..	..	3	200
Total					..	600

(v) *Vidvan*—(under Regulation 7-D).—

(a) In the preliminary examination in Tamil there shall be one paper on the prescribed text-books in Poetry and Prose and one paper on the prescribed text-books relating to Grammar; one paper on composition; and one paper on the History of the Tamil Country.

(b) In the final examination in Tamil there shall be two papers on prescribed Poetry text-books; two papers on text-books relating to Advanced Grammar, Prosody and Poetics; one paper on History of Language and Literature; and one paper on Inscriptions.

The scheme of examination shall be as follows:—

Preliminary.

Subjects.					Hours.	Marks.
Prescribed Text-books in Poetry and Prose.					3	200
Composition	..	..	..	..	3	100
Prescribed Text-books relating to Grammar.					3	200
History of the Tamil Country	..	..	..	..	3	100
Total					..	600

Final.

Subjects.	Hours.	Marks.
Prescribed Text-books in Poetry (I) ..	3	150
Prescribed Text-books in Poetry (II) ..	3	150
Prescribed Text-books relating to Advanced Grammar, Prosody and Poetics (I) ..	3	150
Prescribed Text-books relating to Advanced Grammar, Prosody and Poetics (II) ..	3	150
History of Language and Literature ..	3	100
Inscriptions	3	100
Total ..		<u>800</u>

(vi) *Titles in Arabic, Persian and Urdu.*—

There shall be seven question papers of three hours' duration each in the Preliminary Examinations for Munshi-i-Fazil, Adib-i-Fazil and Tabib-i-Kamil and there shall be eight question papers of three hours' duration each in the Final Examinations of the above-mentioned titles. The maximum marks of each paper shall be 100.

There shall be eight question papers of three hours' duration each in the Preliminary Examination for Afzal-ul-Ulama and Afzal-ul-Atibba Titles Examinations and there shall be nine question papers of three hours duration each in the final Examinations of the above-mentioned titles. The maximum marks of each paper shall be 100.

The scheme of examination shall be as follows:—

AFZAL-UL-ULAMA.

Preliminary.

Subjects.	Hours.	Marks.
Tafsir, Hadith and Usul-i-Hadith ..	3	100
Fiqh, 'Aqa' id and Mantiq ..	3	100
Prose Text books	3	100
Poetry Text-books	3	100
History	3	100
Translation from Arabic into Urdu, Tamil or Malayalam and <i>vice versa</i> ..	3	100
Grammar, Rhetoric and Prosody ..	3	100
Total ..		<u>700</u>

Final.

Subjects.	Hours.	Marks.
Tafsir, Hadith and 'Ilmul Hadith ..	3	100
Fiqh, Usul-ul-Fiqh and 'Ilmul Kalam ..	3	100
Prose Text-books	3	100
Poetry Text-books	3	100
History	3	100
Translation from Arabic into Urdu or Tamil or Malayalam and <i>vice versa</i>	3	100
Mantiq, Falsafah and Balaghat	3	100
Composition in Arabic	3	100
History of Arabic Language and Literature.	3	100
Total ..		900

AFZAL-UL-ATIBBA.

Preliminary.

Subjects.	Hours.	Marks.
Kulliyath and Kimiyah Paper I ..	3	100
Do. Paper II ..	3	100
Tashrihul A'za	3	100
Manafi'ul A'za	3	100
'Ilmul Adwiyah and 'Ilmus Saydiah ..	3	100
'Ilmus Sihat	3	100
Tarikut Tib	3	100
Wajibatut Tabib	3	100
Total ..		800

Final.

Subjects.	Hours.	Marks.
'Ilmut Tashkhis	3	100
Mu'alajat I	3	100
Mu'alajat II—'Ilmul Jarahat	3	100
Mu'alajat III—'Ilmus Sumum wal Hadithat.	3	100
'Ilmul Amrad Waljarathim	3	100
'Ilmul Amrad-ib-Atfal wal Niswan ..	3	100
'Ilmul Qabilah	3	100
Tibbi Qanuni	3	100
Alamradul—Muta'addiyah	3	100
Total ..		900

MUNSHI-I-FAZIL.

Preliminary.

Subjects.	Hours.	Marks
Persian Prose Text-books	3	100
Persian Poetry Text-books	3	100
Composition in Persian—General and Non-detailed study	3	100
Grammar, Rhetoric and Prosody ..	3	100
Islamic History	3	100
Composition in Urdu—General and Non-detailed Study	3	100
Translation from Persian into Urdu and <i>vice versa</i>	3	100
Total ..		700

Final.

Subjects.	Hours.	Marks.
Persian Prose Text-books	3	100
Persian Poetry and Literary Criticism ..	3	100
Composition in Persian—General and Non-detailed study	3	100
History of Persian Language and Literature.	3	100
Islamic History	3	100
Grammar, Rhetoric and Prosody ..	3	100
Composition in Urdu—General and Non-detailed Study	3	100
Translation from Persian into Urdu and <i>vice versa</i>	3	100
Total ..		800

ADIB-I-FAZIL.

Preliminary.

Subjects.	Hours.	Marks
Urdu Prose Text-books	3	100
Urdu Poetry Text-books	3	100
Composition in Urdu—General and Non-detailed Study	3	100
Grammar, Rhetoric and Prosody ..	3	100
Islamic History	3	100
Composition in Persian, Tamil or Malayalam—General and Non-detailed ..	3	100
Translation from Urdu into Persian or Malayalam and <i>vice versa</i>	3	100
Total ..		700

Final.

Subjects.	Hours.	Marks
Urdu Prose Text-books	3	100
Urdu Poetry and Literary Criticism ..	3	100
Composition in Urdu—General and Non-detailed Study	3	100
History of Urdu Language and Literature.	3	100
Islamic History	3	100
Grammar, Rhetoric and Prosody ..	3	100
Composition in Persian, or Tamil or Malayalam—General and Non-detailed ..	3	100
Translation from Urdu into Persian or Malayalam and <i>vice versa</i>	3	100
Total ..		800

TABIB-I-KAMIL.

Preliminary.

Subjects.	Hours.	Marks
Kulliyath	3	100
Kimiyah	3	100
Tashrihul A'da	3	100
Manafi 'ul Ada	3	100
'Ilmul Adwiyah and 'Ilmus Saydalah	3	100
Tarikhi—Tib	3	100
Hifzan-i-Sibat	3	100
Total ..		700

Final.

Subjects.	Hours.	Marks.
'Ilmut Tash Khis	3	100
Mu'alajat I—General	3	100
Mu'alajat II—'Ilmus Sumam wal Hadithat.	3	100
Mu'alajat III—'Ilmul Jarahat	3	100
'Ilmul Amrad Wal Jarathim	3	100
Amrad-i-Niswan was Sibyan	3	100
'Ilmul Qabilah	3	100
Tibbi—Qanuni	3	100
Total ..		800

(vii) *Titles in Syriac and Hebrew.*—

The scheme of examination in the Titles of Malpan and Soppar shall be as follows:—

MALPAN.

Preliminary.

Subjects.	Hours.	Marks.
Prose text-books—Syriac	3	100
Poetry text-books—Syriac	3	100
History of the Syriac Language and Literature	3	100
Translation from Syriac into English.	3	100
Translation from English into Syriac.	3	100
Composition in Syriac	3	100
Total ..		600

Final.

Subjects.	Hours.	Marks.
Prose text-books—Syriac	3	100
Poetry text-books—Syriac	3	100
History of the Syriac Language and Literature	3	100
Translation from Syriac into English.	3	100
Translation from English into Syriac.	3	100
Composition in Syriac	3	100
Total ..		600

SOPPAR.

Preliminary.

Subjects.	Hours.	Marks.
Syriac Prose	3	100
Syriac Poetry	3	100
Translation from Syriac into English.	3	100
Translation from English into Syriac.	3	100
Composition in Syriac	3	100
Hebrew Prose	3	100
Hebrew Poetry	3	100
Total ..		700

<i>Final.</i>						
Subjects.				Hours.	Marks.	
Syriac Prose	..	..	..	3	100	
Syriac Poetry	..	..	..	3	100	
Translation from Syriac into English.				3	100	
Translation from English into Syriac.				3	100	
Composition in Syriac		..	..	3	100	
Hebrew Prose	..	..	..	3	100	
Hebrew Poetry	..	..	..	3	100	
Total				..	700	

11. All the papers in the examination for titles shall be set and answered in the respective languages to which they relate, provided that papers in Sanskrit as the subsidiary language for the Vidvan course mentioned in this Chapter shall be set in Sanskrit and answered in the respective main languages of the candidates. Devanagari script shall be used for Sanskrit.

12. (a) No person shall be permitted to enter upon the course of study for Siromani or Vidvan title, unless he has satisfied the condition in Law 3 of Chapter XXXII of the Laws of the University.

(b) No person shall be permitted to enter upon the courses of study prescribed for the titles *Afzal-ul-Ulama* and *Munshi-i-Fazil*, unless he has obtained a certificate of fitness from the head of the approved institution which he proposes to enter.

(c) No person shall be permitted to enter upon *Tabib-i-Kamil* or *Afzal-ul-Atibba* courses of study unless he has passed an admission test which shall consist of four papers set on the books prescribed for B.A. Part II in Urdu and Persian in the case of *Tabib-i-Kamil* and Arabic and Urdu in the case of *Afzal-ul-Atibba*. The papers in Persian and Arabic shall be set and answered in Urdu and questions on translation in the second papers, in the case of candidates for this test, shall be replaced by questions on paraphrase or composition in the selected language.

Candidates obtaining not less than 35 per cent. of the total number of marks in each language shall be certified as eligible for admission to the respective courses of Tibb-i-Unani.

Those who have passed the preliminary examination of either Munshi-i-Fazil or of Adib-i-Fazil with Persian as the subsidiary language shall not be required to sit for the Admission Test. They can enter upon the course of study prescribed for Tabib-i-Kamil Examination.

Those who have passed the preliminary examination of Afzal-ul-Ulama (with Urdu Translation) shall not be required to pass the Admission Test. They can enter upon the course of study prescribed for Afzal-ul-Atibba Title Examination.

The candidates who have passed and obtained the Diploma of L.I.M. from the Government Indian School of Medicine, Madras, may be exempted from the Admission Test prescribed for the Tabib-i-Kamil and Afzal-ul-Atibba and in their case the period of practical training shall be only one year instead of two and three years for preliminary and final course respectively.

(d) No person shall be permitted to enter upon the courses of study prescribed for the Titles of Malpan and Soppar, unless he has obtained a certificate of fitness from the Head of the approved institution which he proposes to enter.

13. (a) *Marks qualifying for a Pass for Titles—*
Siromani and Vidvan.—A candidate shall be declared to have passed the preliminary examination if he obtains not less than 40 per cent. of the total marks in that examination. A candidate shall be declared to have passed the final examination if he obtains not less than 40 per cent. of the total marks in that examination. A candidate, however, appearing for Vidvan Examination, Preliminary or Final under Regulation 7-B—with Tamil, Telugu, Kannada, Malayalam, Oriya, Marathi or Hindi, as main language and Sanskrit

as a subsidiary language, shall obtain not less than 25 per cent. of the marks in the subsidiary language at the Examination. A candidate, however, appearing for the Vidvan Examination, Preliminary or Final, under Regulation 7-D—Tamil alone—shall obtain not less than 35 per cent. of the marks in each of the following divisions:— (a) Literature, (b) Grammar, (c) Other Subjects. All other candidates shall be deemed to have failed.

Successful candidates in the final examination shall be arranged in three classes:—

The first consisting of those who obtain not less than 60 per cent.; the second, of those who obtain less than 60 per cent. and not less than 50 per cent.; and the third, of those who obtain less than 50 per cent. of the total marks.

(b) Marks qualifying for a Pass for Titles in Arabic, Persian and Urdu and for the Titles of Mulpan and Soppar:—

A candidate shall be declared to have passed the Preliminary Examination, if he obtains not less than 40 per cent. of the total marks in that Examination provided he does not obtain less than 25 per cent. of the total marks either in the main or in the subsidiary language.

A candidate shall be declared to have passed the Final Examination if he obtains not less than 40 per cent. of the total marks in that Examination, provided, however, he does not obtain less than 25 per cent. either in the main or in the subsidiary language. All other candidates shall be deemed to have failed.

<p>Classification of successful candidates.</p>	<p>Successful candidates in the final examination shall be arranged in three classes:—</p>
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The first consisting of those who obtain not less than 60 per cent.; the second, of those who obtain less than 60 per cent. and not less than 50 per cent.; and the third of those who obtain less than 50 per cent. of the total marks.

14. Candidates who have qualified under the Regulations of this Chapter for Titles in Oriental Learning may continue their studies under the same Regulations in order to qualify further (i) for the same title in an additional Branch or in additional Branches, or in an additional Language, or in additional Languages, or (ii) for other Titles, under the conditions following:—

General.

(i) No candidate who has qualified for a Title shall be admitted to any further examination for a Title, except after the expiry of two academic years from the date of passing the last examination; provided that candidates who have qualified for (1) the Siromani Title in any one of the three South Indian Schools of Vedanta included in Branch II or (2) one of the titles in Arabic or Persian (Munshi-i-Fazil or Afzal-ul-Ulama) shall be admitted to a further examination (1) in any other South Indian School of Vedanta, or (2) in the other title in Arabic or Persian after the expiry of one year from the date of passing the last examination.

(ii) Applications for exemption from the production of the prescribed certificates shall be forwarded so as to reach the Registrar before the 1st October preceeding the examination.

(iii) No candidate who has already proceeded to a Title and has been awarded his Diploma shall be admitted at a Convocation a second time to the same Title, notwithstanding that he may have qualified in an additional Branch or in an additional Language: an endorsement shall be made upon his Diploma setting forth the further examinations passed by him, the dates of such examinations and the class in which he was placed.

Special.

(i) *Siromani*.—

A candidate who has qualified for the Title of Siromani in any one of the special branches of study may further qualify in any other branch by passing an examination in such branch consisting of the question papers set in the

special part only for both the Preliminary and Final Examinations in that branch; provided that, in the case of candidates who have already qualified in one of the three South Indian Schools of Vedanta and seek to qualify in any other South Indian School of Vedanta, and such further examination in the special part alone shall consist only of four papers, viz., (1) the two papers on prescribed text-books relating to the Bhashya Prasthana included in the Preliminary Examination, and (2) the two papers prescribed on text-books; Special I and Special II relating to the Vada Prasthana included under (a) in the Final Examination (*vide* Regulation 6, Branch II). Such further examination shall consist of two parts—viz., Preliminary and Final. Each of these two parts shall consist only of the papers set therefor in the subjects of the special part in the year in which the candidate appears. These two parts may, at the option of the candidate, be taken in the same year or in separate years, the examination in the final part in the latter case being taken only after passing the examination in the preliminary part. In the case of candidates who take the examination in both the parts in the same year, those who secure the prescribed passing minimum in the preliminary part alone shall be declared to have passed the examination in that part, while those who fail to secure the prescribed minimum in the preliminary part shall be deemed to have failed in the whole examination.

(ii) *Siromani and Vidvan.*—

A candidate who has qualified for the Title of Siromani may further qualify for the Title of Vidvan by passing the examination for that Title in accordance with the Regulations, provided that such a candidate who offers for his examination Sanskrit and a Dravidian language, Marathi, Oriya or Hindi shall be exempted from examination in Sanskrit and shall be permitted to take the whole examination in the selected Indian language in one year, and may qualify for the Title of Vidvan by passing the examination in that language; provided also that such a candidate who offers for his examination two Dravidian languages and is

exempted by the Syndicate from the production of the required certificates shall be permitted to take the preliminary and final examinations in successive years.

(iii) *Vidvan*.—

A candidate who has qualified for the Title of Vidvan may qualify in an additional language or in additional languages by passing the examination in such language or languages according to the Regulations. A candidate who offers one additional language only may take the whole examination in that language in one year, and a candidate who offers for his examination two Dravidian languages and is exempted by the Syndicate from the production of the required certificates shall be permitted to take the preliminary and final examinations in successive years.

(a) (i) A candidate who has qualified for the Title of Vidvan under Regulation 7-A may further qualify for the Title under Regulation 7-B. He shall be exempted from examination in Sanskrit.

(ii) A candidate who has qualified for the Title of Vidvan under Regulation 7-A may further qualify for the Title under Regulation 7-C. He shall be exempted from examination in the Dravidian Language which was offered by him for the examination under Regulation 7-A.

(b) A candidate who has qualified for the Title of Vidvan under Regulation 7-B may further qualify for the Title under Regulation 7-A or Regulation 7-C. He shall be exempted from examination in the Dravidian Language, Marathi, Oriya or Hindi which was offered by him for the examination under Regulation 7-B.

(c) A candidate who has qualified for the Title of Vidvan under Regulation 7-C may further qualify for the Title under Regulation 7-A. He shall be exempted from examination in

the Dravidian Language which was offered by him for the examination under Regulation 7-C.

- (d) A candidate who has qualified for the Title of Vidvan under Regulation 7-D may further qualify for the Title under Regulation 7-A, 7-B or 7-C. He shall be exempted from examination in Tamil, if Tamil is offered as one of the languages for the examination.

CERTIFICATES OF PROFICIENCY IN ORIENTAL LEARNING.

Subjects for Examination 15. Candidates for certificates shall offer for their examination one of the following subjects—

- (1) Literary Criticism as applied to Sanskrit Literature.
- (2) Indian Philosophy in its relation to Western Philosophy.
- (3) Indo-European Philology with special reference to Sanskrit.
- (4) South Indian Languages and Literatures in their bearing on Ancient Indian History and Culture.
- (5) Hindu Law and Jurisprudence.
- (6) Muhammadan Law and Jurisprudence.
- (7) Literary Criticism as applied to Arabic or Persian Literature.
- (8) Arabian Philosophy in its relation to Western Philosophy.
- (9) Semitic Philology—for Arabic; and Indo-Persian Philology with special reference to Persian—for Persian.
- (10) Dravidian Philology with special reference to Dravidian Languages of South India—Tamil, Telugu, Kannada or Malayalam.

(11) Tafsir and 'Ilmul-Tafsir.

(12) Hadith and 'Ilmul Hadith.

(13) Literary Criticism as applied to Urdu Literature.

Course of studies--one year. 16. The course of studies for the examination shall extend over a period of one academic year and shall be taken in an institution or institutions approved by the Syndicate.

Admission 17. No candidate shall be admitted to the examination for certificates until the expiry of two years from the date of his passing the preliminary examination for Titles.

Papers set and answered in English. 18. The question papers in the examination for certificates shall be set and answered in English, except in the two subjects (11) and (12) where the papers shall be set and answered in Arabic, and the paper on (13) shall be set and answered in Urdu.

Duration of paper 19. In each subject for the examination for certificates there shall be one paper of three hours' duration, which candidates shall be required to answer on the morning of the day following the final examination for Titles. The marks for each paper shall be 150.

Classification of successful candidates. 20. A candidate shall be declared to have passed the examination if he obtains not less than 40 per cent. of the marks. All other candidates shall be deemed to have failed in the examination.

Successful candidates shall be arranged in three classes:—

The first consisting of those who obtain not less than 60 per cent.; the second, of those who obtain less than 60 per cent. and not less than 50 per cent.; and the third of those who obtain less than 50 per cent.

21. Candidates for certificates, who have passed the examination for Titles in one optional subject, may present themselves for examination in another optional subject after an interval of one year without further attendance in an approved institution.

**Candidates may
qualify for another
optional**

DEGREE OF BACHELOR OF ORIENTAL LEARNING.

22. The Degree of Bachelor of Oriental Learning shall be open to candidates. -

(a) who are eligible under the Laws of this University for admission to any one of the courses for the Oriental Title Examination and who in addition have either passed the Matriculation Examination of this University or an examination accepted as equivalent thereto, or shall have secured 35 per cent of the marks in the Optional English paper in the Sanskrit Entrance Examination of the Government of Madras; and

(b) have passed the Intermediate Examination in Arts and Science of this University with Group D in Part III, or an examination accepted by the Syndicate as equivalent thereto,

provided, however, that such candidates as have passed the preliminary division of the Oriental Title Examination shall be exempted from the courses of studies and the examinations for Part II and Group D

• of Part III of the Intermediate Examination in Arts and Science; and

(c) have pursued subsequently a further course of study for a period of not less than three academic years in a Constituent or Affiliated College in the subjects prescribed for the B.O.L. Degree Examination and have passed the examination for the Degree hereinafter prescribed.

23. The course shall consist of three parts and comprise instruction in the following subjects, according to a syllabus to be prescribed from time to time:—

Part I—English or a Modern European Language (French or German) (of the standard of the B.Sc. (Pass) Degree Examination—Part I.)

Part II—The subjects prescribed for the *Final Division* of the examination for any one of the Oriental Titles.

Part III—Any two of the subjects prescribed, under Regulation 15 of this Chapter, for Certificates of Proficiency in Oriental Learning.

24. Candidates shall be examined in—

Part I—*English or a Modern European Language* (French or German):—

The examination shall be a written one and the scheme of examination and of marks shall be the same as for Part I for the B.Sc. (Pass) Degree, (*vide* Regulations 2 and 3 of Chapter XIV).

Part II—*Optional Subjects*:—The examination shall be a written one and the scheme of examination and of marks shall be the same as for the *Final Division* of the examination for any one of the Oriental Titles, (*vide* Regulations 10 and 13 *supra*).

Part III—*Optional Subjects*:—The examination shall be a written one and the scheme of examination and of marks shall be the same as for *any two* of the subjects prescribed for Certificates of Proficiency in Oriental Learning, (*vide* Regulations 15, 19 and 20 *supra*).

25. A candidate shall not be eligible for the Degree of Bachelor of Oriental Learning, unless he has passed the examination in English or a Modern European Language (French or German) under Part I, the examination in the selected subjects under Part II, and the examination in the selected subjects under Part III. A candidate shall be declared to have passed Part I of the examination, if he obtains not less than 40 per cent of the total marks in that Part; a candidate shall be declared to have passed Part II of the examination, if he obtains the marks qualifying for a pass in the Final Division of the examination for any one of the Oriental Titles, in accordance with the Regulations in this Chapter; and a candidate shall be declared to have passed Part III of the examination, if he obtains not less than 40 per cent of the marks in each of the two subjects offered under Part III.

26. Successful candidates shall be arranged in three classes:—

The first, consisting of those who obtain not less than 60 per cent; the second, of those who obtain less than 60 per cent and not less than 50 per cent; and the third, of those who obtain less than 50 per cent and not less than the minimum prescribed for a pass in that Part.

27. A candidate for the B.O.L. Degree Examination may, at his option, present himself for the whole or any Part or Parts of the examination at any one time;

provided that he shall not be permitted to present himself on the first occasion for Part III of the examination unless he presents himself also for Part I or he has already passed Part I of the examination.

28. Any candidate who obtains not less than 50 per cent in Part II and in one of the subjects under Part III and does not qualify for the B.O.L. may be given a Vidvan or Siromani Title or Certificate of Proficiency, as the case may be, provided the same is recommended by the Board of Examiners. No class shall be marked in the certificate in the case of the above Titles or in the case of such Certificates of Proficiency.

DEGREE OF MASTER OF ORIENTAL LEARNING.

29. Every candidate for the Degree of Master of Oriental Learning shall have passed the Examination for the Degree of Bachelor of Oriental Learning of this University or an examination of any other University accepted by the Syndicate as equivalent thereto and shall have thereafter pursued for two years an advanced course of study bearing upon the subject selected by him for the examination for that certificate.

30. Every candidate for the Degree shall be required to submit with his application—

(a) a certificate in the following terms from the head of an institution approved by the University for imparting instruction in, or from a member of the Boards of studies dealing with the subjects offered by the candidate in Part II of the B.O.L. Degree Examination, or from some competent scholar recognized by the Syndicate:—

**Submission of
application, thesis,
etc.**

Form of Certificate.

I hereby certify that, to the best of my knowledge and belief,.....has pursued, for not less than two years after qualifying for the B.O.L. Degree an advanced course of study, bearing upon one of the subjects in Part III of his B.O.L. Degree course.

Station

Signature

Date

with designation

and (b) an original thesis in English showing evidence of original work connected with the special subject in which he qualified himself for his certificate, the candidate indicating in a preface to his thesis, and specially in notes, the sources from which his information is taken and the extent to which he has availed himself of the work of others.

The application and thesis must be forwarded so as to be received by the Registrar between 1st March and 1st April, and between 1st October and 1st November of every year.

31. The thesis shall be referred by the Syndicate to a Board consisting of not more than three persons who at their discretion may require the candidate to appear before them to be tested orally with reference to the thesis (and to his facility in the use of the English Language). The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral examination, if any, stating whether, in its opinion, the candidate is, by reason of his attainments, a fit person to receive the Degree of Master of Oriental Learning. The Syndicate shall publish the name of each successful candidate for the Degree with the title of his thesis.

Transitory Regulation.

32. Notwithstanding anything contained in the Laws of the University, those who have qualified for a Title and also for a Certificate of Proficiency in Oriental Learning in any *two* of the subjects prescribed under Regulation 15 of this Chapter for Certificates of Proficiency prior to 1940, and who seek to qualify for the B.O.L. Degree shall be permitted to present themselves, in the same year, or in different years, for Part I—English—of the Intermediate Examination in Arts and Science and for Part I—English or a Modern European Language (French or German)—of the B.O.L. Degree Examination; those who have qualified for a Title and also for a Certificate of Proficiency in Oriental Learning in any one of the subjects prescribed under Regulation 15 of this Chapter prior to 1940, and who seek to qualify for the B.O.L. Degree shall be permitted to present themselves, in the same year or in different years, for Part I—English—of the Intermediate Examination in Arts and Science and for Part I—English or a Modern European Language (French or German)—of the B.O.L. Degree Examination and for a second selected subject in Part III of the B.O.L. Degree Examination; those who have qualified for a Title, prior to 1940 but not for a Certificate of Proficiency in Oriental Learning, and who

seek to qualify for the B.O.L. Degree shall, after the lapse of three years from their qualifying for a Title in Oriental Learning be permitted to present themselves, in the same year or in different years, for Part I—English—of the Intermediate Examination in Arts and Science, for Part I—English or a Modern European Language (French or German)—of the B.O.L. Degree Examination and for Part III of the B.O.L. Degree Examination; candidates who seek to qualify for the B.O.L. Degree under this Transitory Regulation shall not be required to produce any certificate of attendance at a college; such candidates shall be declared to have qualified for the B.O.L. Degree, if they secure the percentage of marks prescribed in Law 6 of Chapter XXXIX and Laws 25 and 26 of this Chapter and they shall be arranged in three classes in accordance with Law 26 of this Chapter; and candidates who seek to qualify for the B.O.L. Degree under this Transitory Regulation shall be required to send, along with their applications for admission to the examination, the following certificates:—

- (a) A certificate in the following form shall be submitted along with applications for admission to Part I of the B.O.L. Degree Examination and should be produced from a member of the Board of Studies in English, or from a Lecturer or Assistant Lecturer in English on the staff of a Constituent or Affiliated College, approved for the B.O.L. Degree Course, or from some competent scholar recognised by the Syndicate:—

Form of Certificate.

I hereby certify that, to the best of my knowledge and belief,.....is qualified by his attainments in English to sit for Part I of the B.O.L. Degree Examination and that he has satisfied the requirements in Transitory Regulation 32 of Chapter LXI.

Station,

Signature,

Date,

Designation.

- (b) A certificate in the following form shall be submitted along with applications for admission to Part III of the B.O.L. Degree Examination and should be produced from a member of the Board of Studies dealing with the subjects in Part III of the B.O.L. Degree Course, or from the Principal of a Constituent or Affiliated College approved for the B.O.L. Degree Course, or from a competent scholar recognised by the Syndicate:—

Form of Certificate.

I hereby certify that to the best of my knowledge and belief,.....is qualified by his attainments to sit for the B.O.L. Degree Examination in Subject (1)..... and Subject (2)....., under Part III of the B.O.L. Degree Course; and that he has satisfied the requirements in Transitory Regulation 32 of Chapter LXI.

Station,

Signature,

Date,

Designation.

CHAPTER LXII.

Diploma and Certificate Courses.

(1) *Diploma in Economics.*

1. No candidate shall be eligible for the Diploma in Economics unless he has completed the prescribed course of study and has satisfied the examiners in the qualifying examination.
- Eligibility for Diploma.**

Course of Study.

2. The course of study shall be:--

1. Economics.
2. Statistical Methods.
3. Recent Economic History and Economic Geography.
4. Rural Economics.
5. Social Economics (including Elements of Social Institutions).
6. A special subject in 4 or 5.

Every candidate shall also submit before 1st March a short thesis based on original enquiry on some problem of limited scope connected with either 4 or 5.

3. The course of study shall be open only to students who have qualified for a degree in this University or other recognised Universities.

Qualification for admission.

4. Applications to enter upon the course of study must reach the Professor of Indian Economics not later than the 15th June of each year.

Application.

5. The course for the Diploma in Economics shall be normally for one year, but for part-time students it shall extend over two years.

Duration of Course

6. No student shall be admitted to the examination unless he or she has attended not less than three-fourths of the lectures and classes provided, and also produces the prescribed certificate.

Attendance.

7. A fee of Rs. 75 shall be paid to the University by each student on admission to the course, except in the case of part-time students who may pay the fee in two annual instalments of Rs. 37-8-0.

Fees.

8. A candidate shall be declared to have passed the examination if he obtains not less than forty per cent. of the total marks in all the papers taken together. All other candidates shall be deemed to have failed in the examination. Successful candidates obtaining not less than sixty per cent. of the marks shall be declared to have passed with distinction.

Classification of successful candidates

9. Notwithstanding anything contained in the foregoing Regulations, it shall be competent for the Syndicate, by previous notice in the Gazette, to suspend for any year or any number of years the courses and examinations for the Diploma in Economics provided always that any student permitted to enter upon the courses, who qualified for the certificate prescribed in Regulation 6, shall be permitted to present himself for examination in accordance with the Regulations, at the earliest opportunity at which he would have been entitled to appear but for suspensory notice.

Syndicate competent to suspend course and examination

10. Notwithstanding anything contrary contained in this chapter, students who were admitted to the Diploma course in 1928-29 will be permitted to continue their course in 1929-30 under the old regulations.

(2) *Diplomas in French and German.*

11. No candidate shall be eligible for a diploma in French or German who has not undergone a prescribed course and satisfied the Examiners in the qualifying Examination.

Eligibility for Diploma

12. No candidate shall be admitted to the courses of instruction in French and German who has not passed the examination for Certificates of Proficiency in Oriental Learning or the Matriculation Examination of this University or an examination recognised by the Syndicate as equivalent thereto.

Qualification for Admission

13. The course which is a part-time course is primarily intended for such persons as are desirous of proceeding over-seas for higher studies, but shall be open to other persons approved by the Syndicate provided they have satisfied the condition laid down in Law 12 of this Chapter.

Course—for whom intended

14. The course shall consist of three terms extending over one academic year. Applications for admission must reach the Registrar not later than the 15th June.

Duration of the course

15. For the purpose of entrance to the course no previous acquaintance with the language is required and the candidates will be taught on a syllabus and text books prescribed from year to year.

16. There shall be an examination held yearly in the first week of July or on such other dates as may be fixed by the Syndicate.

Date of Examination

17. No student shall be admitted to the examination unless he has attended not less than 75 per cent. of the total attendances at lectures and has produced a certificate from the lecturer certifying that his progress and conduct have been satisfactory. The examination shall consist of two papers, the first of three hours' and the second of two hours' duration. The first paper shall contain questions on text-books and grammar, and the second paper shall contain questions on translation from the selected language into English and *vice versa*.

Attendance

Examination

18. A candidate shall be declared to have passed the examination if he obtains not less than forty per cent. of the total marks in all the papers taken together. All other candidates shall be deemed to have failed in the examination. Successful candidates obtaining not less than sixty per cent. of the marks shall be declared to have passed with distinction.

Classification of successful Candidates

19. The fee for the course in either French or German shall be Rs. 45 payable to the University on admission to the course, provided that in the case of students reading for Honours Degree Examination in Arts and Science, other Degree Examinations (including Professional Degree Examinations), or the Diploma Examinations in Economics and Geography, and students in the Bachelor of Engineering class who have still to complete their practical course, preference being given to students reading for Honours, a concession fee which may be fixed by the Syndicate shall be levied; and provided the number of students admitted at the reduced rate in any particular year shall not exceed 50 per cent. of the total admissions in each language in that year.

20. Notwithstanding anything contained in this Chapter, it shall be competent for the Syndicate, by previous notice in the Fort St. George Gazette, to suspend for any year or any number of years the course and examination for the Diploma in French or German.

Syndicate competent to suspend course and Examination

(3) *Certificate Course in Librarianship.*

21. No candidate shall be eligible for the Certificate in Librarianship unless he has completed the prescribed course of study and has satisfied the Examiners in the qualifying examination.

Eligibility for the certificate

Course of study

22. The course of study shall be:—

Part I--(Theory)--

1. Laws of the Library Science including Library Organization

- (a) Library Planning.
- (b) Library Furniture.
- (c) Library Systems.

2. *Library Routine.*—

- (a) Ordering and Accessioning.
- (b) Library Records.
- (c) Issue Methods.
- (d) Reference Work.

3. *Classification.*

- (a) Canons of Classification.
- (b) Colon Scheme—outline, with detailed application to selected subjects only.

4. *Cataloguing.*

- (a) Physical Form.
- (b) Internal Form.
- (c) Cataloguing Rules.

PART II—(PRACTICAL).

- 1. Classification in accordance with the colon scheme.
- 2. Cataloguing in accordance with the cataloguing rules of the Madras University Library.

23. The course of study shall be open to candidates who have passed the Intermediate Examination in Arts and Science of this University or the examination for Certificates of Proficiency in Oriental Learning or an Examination recognized by the Syndicate as equivalent thereto, provided, however, that this rule shall not apply to Librarians of five years' standing who are holders of completed S.S.L. Certificates or E.S.L. Certificates or Matriulates of this University.

24. Applications for admission to the course must be submitted to the Registrar so as to reach him not later than the 31st of January of each year and admissions thereto shall be made by the Syndicate.

25. The course for the Certificate in Librarianship shall extend over a period of about three months, beginning in the month of March or April each year.

Duration of the Course

26. A fee of Rs. 20 shall be paid to the University by each student on admission to the course.

Admission fee.

27. There shall be an examination at the end of the course consisting of two papers of three hours' duration each as follows:—

Scheme of examination.

I. Theory	..	60 marks.
II. Practical	..	40 „
		—
Total	..	100 „

28. No student shall be admitted to the examination unless he has attended not less than three-fourths of the lectures and classes provided, and has produced the prescribed certificate.

Attendance.

29. No candidate shall be declared to have passed the Examination unless he obtains not less than 35 per cent. of the marks in each part of the Examination, and not less than 40 per cent. of the aggregate marks.

Marks qualifying for pass and distinction.

Successful candidates who obtain not less than 60 per cent. of the aggregate marks shall be declared to have passed the Examination with distinction.

30. Candidates who fail at an examination may, without putting in any additional attendance at the course, appear for the examination in any subsequent year.

31. The course will not be conducted in any particular year if less than 15 students apply for admission to the course.

32. The Syndicate may, by notification in the Gazette, suspend the course for the Certificate in any year if it finds it necessary to do so.

(4) *Diploma in Geography.*

33. No candidate shall be eligible for the Diploma in Geography unless he has completed the **Eligibility for Diploma.** prescribed course of study and has passed the qualifying examination and has satisfied the Examiners in a dissertation on an approved subject.

34. No candidate shall be admitted to the course unless he has qualified for a Degree in **Qualification for Admission** Arts or Science of this University or a Degree of any other recognized University accepted as equivalent thereto by the Syndicate.

It shall be competent for the Syndicate to admit persons who have passed the Intermediate Examination with Geography as their optional subject, and Teachers in Schools or Colleges within the jurisdiction of this University who can produce evidence of sufficient knowledge of the subject which will enable them to profit by the course.

35. Applications for admission to the course must **Application** reach the Registrar not later than the 15th June of each year.

36. The course of study shall be as follows:—

(1) The Physical Basis of Geography, including the elements of Meteorology, Oceanography, **Course of Study** and Geomorphology (for Syllabus *vide* **Appendix XVI**).

(2) General Regional Geography of the World with a special study of the Regional Geography of India and any one of the three following

continents:—Eurasia, North America, South America. (The continent will be prescribed from time to time).

(3) A short course in one of the following:—

- (a) Historical and Political Geography.
- (b) Economic Geography.
- (c) Bio-Geography and Anthro-po-Geography.

(4) Practical Geography.

Every candidate shall also submit before the 15th May following the written and practical examination a short dissertation on a selected area in India.

Duration of the Course. 37. The course for the Diploma shall be normally one academic year—July to March.

Attendance 38. No student shall be admitted to the examination unless he has attended not less than three-fourths of the lectures and other classes provided and has obtained the prescribed progress and attendance certificate.

Fee. 39. The fee for the course shall be Rs. 75 which shall be paid by every student on admission to the course.

Scheme of Examination. 40. The subjects and scheme of Examination shall be as follows:—

- (1) The Physical Basis of Geography, including the elements of Meteorology, Oceanography and Geomorphology .. 1 paper of 3 hours.
- (2) General Regional Geography of the World with a special study of the Regional Geography of India and any one of the three following continents:—Eurasia, North America, South America. (One General Paper, one on India and one on the selected continent). .. 3 papers of 3 hours each.

- (3) Optional subject—Historical and Political Geography *or* Economic Geography *or* Bio-Geography and Anthro-po-Geography .. 1 paper of 3 hours.
- (4) Use of instruments, map-making, map-reading and map correlation. The test under this head shall be more or less practical in character .. 1 paper of 3 hours.
- (5) Dissertation ..
- (6) Practical Geography notes 50 marks.

41. Candidates shall be declared to have passed the Examination, who have obtained not less than 50 per cent of the marks in each of any two of the papers and not less than 35 per cent. in each of the remaining papers, and 50 per cent in the dissertation. Candidates who fail to get the minimum in the dissertation may submit a fresh one later, within a prescribed period.

Provided, however, (a) a candidate who fails in Dissertation, and passes in the written examination shall be regarded as having failed in Dissertation only and shall be permitted to submit a fresh Dissertation;

(b) a candidate who has not submitted a Dissertation shall be considered to have failed in Dissertation only; and

(c) a candidate who fails in the written examination only, shall appear only for the written examination.

42. Successful candidates who obtain not less than 60 per cent. of the aggregate marks shall be declared to have passed the examination with distinction.

43. It shall be competent for the Syndicate to suspend the course in any year or for a number of years.

(5) *Diploma in Indian Music.*

44. No candidate shall be eligible for a Diploma in Indian Music who has not undergone the prescribed course and has not passed the qualifying examination.

45. No candidate shall be admitted to the course unless he has been declared eligible for admission to a University course of study or has passed the Matriculation Examination or an examination recognized by the Syndicate as equivalent thereto, and has already received sufficient training in Indian Music to enable him to benefit by the Diploma course,

provided, however, it shall be competent for the Syndicate to admit to the course women students sufficiently trained in Indian Music who are holders of completed Secondary School-Leaving Certificate, but are not declared eligible for admission to University course of study.

46. The course shall be a full-time course primarily intended for such persons as desire to attain high proficiency in Indian Music.

47. Applications for admission to the course must be received in the Registrar's Office before the 15th June each year. Applicants may be subjected to a test before selection.

48. The course shall extend over a period of two academic years or six terms.

49. Instruction shall be imparted in the Theory and Practice of Music, Vocal, Violin, Veena, Gotuvadya and Flute.

The course of study shall be prescribed from time to time. Candidates shall take either Vocal or Instrumental Music (Violin or Veena or Gotuvadya or Flute) for the practical course.

50. No candidates shall be admitted to the examination unless he has kept not less than three-fourths of the attendance and produced the required certificates of attendance and progress.

51. The examination shall be both written and practical. There shall be two papers on Theory, each of three hours' duration and two practical tests. At the practical examination candidates shall be expected to sing or play any of the ragas prescribed as well as compositions in any of the talas prescribed.

Scheme of Examination.

52. A candidate shall be declared to have passed the examination if he obtains not less than 35 per cent. of the marks in theory, 45 per cent. of the marks in the Practical Examination and 50 per cent. of the marks in the aggregate.

Marks qualifying for a pass.

Successful candidates obtaining not less than 60 per cent. of the marks in the Practical Examination and 75 per cent. of the marks in the aggregate shall be declared to have passed with distinction.

53. It shall be competent for the Syndicate to suspend the course in any year or for a number of years.

54. Notwithstanding anything contained in the above Regulations, students who have been admitted to the Diploma Course in Indian Music and the examinations in accordance with the Transitory Regulations framed in the years 1933-34, and 1934-35, and who have not qualified for the Diploma, may be admitted again to the course and permitted to appear for the Diploma Examination.

CHAPTER LXIII.

Transitory Regulations.*

1. (i) Candidates for the Degree of Bachelor of Arts who have passed at least one of the divisions of the B.A. Degree Examination under the Old Bye-laws may, on the recommendation of the Syndicate be permitted to appear for the B.A. Degree Examination under the New Regulations in the Parts or Groups corresponding to the divisions of the

Candidates who have passed one Division of B.A. (old) to qualify for the degree

* The Regulations in this Chapter are under revision in view of the new Regulations adopted. All Regulations in this Chapter except 3, 4 and 5 are obsolete and have been superseded by other Regulations.

B.A. Degree Examination under the Old Bye-laws which they have not passed. Orders of exemption granted under this regulation shall be permanent.

(ii) For the purposes of the foregoing Regulation the following three papers in each of the sub-division of Group (vi) (Languages other than English) shall be taken as the equivalent of Division II under the Old Bye-laws:—*Sanskrit*—Books of the Later Period (first paper), Books of the Later Period (second paper), History of Sanskrit Literature; *Urdu*—Prose Books, Poetry, Composition; *Arabic* or *Persian*—Prose Books, Poetry, Translation; a *Dravidian Language* or *Oriya* or *Marathi*—Set Books and History of Literature, Composition; *Greek* or *Latin*—Set Books and History of Literature, Set Books and History of Literature, Prose, Composition; *French* or *German*—Set Books and History of Literature, Set Books and History of Literature, Composition; *Hebrew*—Set Books, Set Books, translation. Candidates failing to obtain one-third of the marks in these papers taken together shall not pass.

(iii) Applications for admission to the examination, together with the necessary exemption orders or applications for exemption must be submitted by the date specified for the submission of applications by candidates for the B.A. Degree Examination under the New Regulations.

(iv) The fee for admission to the examination in both parts shall be Rs. 40: in either Part I or Part II (except in Group (vi) Rs. 25; and in Part II, Group (vi) Rs. 20.

2. A student who has qualified for the four term certificates required to be produced by candidates for the First Examination in Arts under the existing bye-laws and regulations shall be allowed to appear for the Intermediate Examination under the New Regulations on the production of a certificate or certificates of having attended an additional year in an affiliated college provided he offers for the examination the following optional groups:—i (a) Mathematics, (b) Physics, (c) Chemistry, or ii (a) Natural Science, (b) Physics, (c) Chemistry. In case he offers any

**Candidates with
F.A. four term
certificates to
appear for Inter-
mediate**

three of the subjects of (Groups iii, the production of a certificate or certificates of having attended an additional year shall not be required.

Transitory Regulations governing Examinations for Medical Degrees 3. (i) Candidates for the M.B. & B.S. Degree who have completed the course of study for the Second M.B. & C.M. Degree Examination shall be permitted:—

(1) if they passed the Second M.B. & C.M. Degree Examination, to proceed with their studies for the degree.

(2) if they have not appeared at or have failed to pass the Second M.B. & C.M. Degree Examination, to appear for the Second M.B. & B.S. Degree Examination without the production of further certificates and to be examined in all subjects prescribed for the examination other than Materia Medica, and in the event of passing the examination therein to proceed with their studies for the degree;

provided that no such candidates shall be considered qualified for the M.B. & B.S. Degree unless they produce the certificates required by the regulations of having completed at some time during their course in a college of medicine affiliated to the University the necessary course of study in Materia Medica and pass the examination held in this subject according to the regulations for the M.B. & B.S. degree

(ii) The revised Regulations for the M.B. & B.S. and the L.M. & S. degree sanctioned in G. O. No. 668, Home (Education), dated May 27, 1918, shall have retrospective effect—

(a) for the benefit of candidates for a degree in Medicine who, during the year 1917-18, were engaged in the study of Medicine in a college affiliated to this University;

and

(b) until and including the examination held in April, 1924, for the benefit of candidates who have taken or have qualified for the Degree of Licentiate in Medicine and Surgery and who passed the Third M.B. & B.S. or the

Third M.B. & C.M. Degree Examination under preceding Regulations.

They shall be exempted as candidates for the M.B. & B.S. degree from re-examination in any subject or subjects in which they have at any time gained total marks qualifying for such exemptions under the revised Regulations.

(iii) A Licentiate in Medicine and Surgery who graduated under the Regulations prior to April, 1914, shall be permitted to appear for the M.D. or M.S. Degree Examination subject to the following provisions:—

(1) that the candidate produces satisfactory evidence of having been regularly engaged in the practice of Medicine for a period of not less than seven years subsequent to obtaining the L.M. & S. degree;

(2) that the candidate produces satisfactory evidence of having taken an approved course or courses or of having held a Medical or Surgical appointment at one or more of the hospitals attached to a college of medicine affiliated to this University, for a period of not less than one year immediately preceding the date on which he applies to be admitted to the examination for the M.D. or M.S. degree.

(3) that the candidate produces testimonials from two Doctors of Medicine, or two Masters of Surgery or two Fellows of the University, certifying that he is in habits and character a fit and proper person to receive the degree.

(4) that the candidate produces a certificate signed by the President of the Faculty of Medicine and by the Medical Officer in charge of the Hospital in which he has taken the course at which he has held an appointment as approved in para. 2 above, that the work in which he has been specially engaged in the said hospital is a suitable preparation for the particular branch or subjects of the M.D. or M.S. Degree Examination respectively for which he selects to appear.

(iv) The second paragraphs of Regulations 12 and 18 of Chapter XXVI of Vol. I of the Calendar for 1921, which were rescinded at the special meeting of the Senate held on 21st January 1921, shall remain in force for the benefit of candidates for a Degree in Medicine who previous to the year 1921-22 were engaged in the study of medicine in a college affiliated to this University, but had not completely passed the First and Second M.B. & B.S. or L.M. & S. Examinations.

(v) The Regulations printed in Volume I of the Calendar for 1924 relating to the courses of study and examinations for the M.B. & B.S. Degree or L.M. & S. Degree shall remain in force for the benefit of candidates who will have entered upon their courses of study prior to July 1926 subject to such alterations in the curricula of studies as may be made and prescribed from time to time.

(vi) Candidates, who appear for the 2nd M.B. & B.S. or the L.M. & S. Examination in April 1927 for the first time, may be permitted to take Anatomy, Physiology and Organic Chemistry in April 1927, and Materia Medica in April 1928 or a subsequent year at the 3rd M.B. Examination. They may be declared to have passed:—

(1) in the three subjects under the 2nd M.B. & B.S., or L.M. & S. Examination, if they obtain marks as follows:—

Anatomy, Physiology, and Organic Chemistry in April 1927

Anatomy		Physiology		Organic Chemistry	Total
Written	Practical and Oral	Written	Practical and Oral		
100	100	100	100	100	500
50 for M.B.	50 for M.B.	50 for M.B.	50 for M.B.	... M.B. or L.M. & S. 33	250 for M.B.
40 for L.M. & S.	40 for L.M. & S.	40 for L.M. & S.	40 for L.M. & S.		200 for L.M. & S.

- (2) in *Materia Medica* under the 2nd M.B. & B.S., or the L.M. & S. Examination and the two subjects under the 3rd M.B. & B.S., or the L.M. & S. Examination, if they obtain marks as follows:—

Materia Medica, Pathology and Bacteriology and Hygiene
in April 1928

Materia Medica	Pathology and Bacteriology		Hygiene		Total
	Written	Practical and Oral	Written	Practical and Oral	
100	100	100	100	50	450
M.B. or L.M. & S. 33	50 for M.B. 33 for L.M. & S.	50 for M.B. 33 for L.M. & S.	50 for M.B. 33 for L.M. & S.	25 for M.B. 17 for L.M. & S.	225 for M.B., 180 for L.M. & S.

- (vii) Candidates for the M.B. & B.S. Degree who obtain the L.M. & S. Degree shall be admitted to Part II of the Final M.B. & B.S. Degree Examination without the production of an additional certificate of attendance.
- (viii) A candidate for the Final Examination in *Medicine* who obtains not less than 40 per cent. of the marks in (1) Ophthalmology and (2) Medical Jurisprudence, and not less than 40 per cent. in the written part of each of the remaining subjects, and not less than 40 per cent. in clinical and oral *Medicine* taken together and not less than 40 per cent. in each of the following (a) Clinical Surgery, (b) Operative and Oral Surgery taken together,

and (c) Practical and Oral Midwifery taken together, shall be declared to have qualified for the L.M. & S. Degree.

Candidates who fail, but obtain passing mark for the L.M. & S. Degree in all the parts of any particular subject shall be exempted from re-examination in that subject.

A candidate for the Final M.B. & B.S. Degree Examination shall be declared to have passed the Examination if he obtains not less than one half of the marks in (1) Ophthalmology and (2) Medical Jurisprudence, and not less than one half of the marks in the written part of each of the remaining subjects, not less than one half of the marks in clinical and oral medicine taken together and not less than one half of the marks in each of the following:—

- (a) Clinical Surgery.
- (b) Operative and Oral Surgery taken together.
- (c) Clinical, Practical and Oral Midwifery taken together.

4. Candidates for degrees at the Convocation held on November 23, 1916, who were prevented from attendance thereat by the conditions of weather then prevailing, may, with the permission of the Syndicate, and without payment of the fee of rupees twenty-five prescribed by Regulation 68 (Calendar 1918), be admitted to their several degrees *in absentia* at any subsequent Convocation: such candidates for degrees may also

**Candidates
prevented from
attendance at
Convocation of
1916 by cyclone**

with the further permission of the Syndicate and notwithstanding any provisions to the contrary in the regulations, appear for any examination open to graduates of the University for which they are otherwise qualified, as if they had actually received their diplomas and had been admitted to their degrees in Convocation.

5. A candidate who has already qualified for the Degree of Bachelor of Arts (Honours) in Branch ii-A. (Physics), or ii-B (Chemistry), or in any one of the subjects of Branch iii (Natural Sciences) as the main subject, may further qualify for that degree in an additional allied Science Branch as the main subject.

**B. A. (Hons.) in
Sc. Branches per-
mitted to study in
an additional Sc.
Branch :**

A candidate desirous of coming under the provisions of the above Regulation shall submit his laboratory note-book containing the record of his practical work performed during the period of study for the Examination (duly certified by his Professor) as a *bona fide record* of work done by him. The laboratory note-book shall be submitted on the first day of the Practical Examination to the Examiners engaged in conducting the Examination.

He shall be exempted from examination in the subsidiary subject, provided it was the main subject in which he previously qualified for the Honours Degree.

A candidate coming under the provisions of this Regulation shall be declared to have passed the examination if he has obtained not less than 40 per cent. of the total marks and 30 per cent. of the marks in each division of the examination. The Divisions shall be as follows:—

(a) Written examination in the Main subject.

(b) Practical examination and laboratory note-books in the Main subject.

6. A candidate for the B.A. (Hons.) Degree who has passed the B.A. Degree Examination shall be permitted to appear for the B.A. (Hons.) Degree Examination after a two years' course, provided he has passed the B.A. Degree Examination in the subjects for which he desires to appear.

**B.A.'s to qualify
for Honours under
Transitory
Regulations**

Each such candidate shall forward so as to reach the Registrar before the 20th March preceding the Examination, certificates, in the form hereinafter prescribed, from

the head of an affiliated college to the effect that he has attended an affiliated college for a period of at least two years after passing the B.A. Degree Examination, that he has completed the course of instruction in the subject in which he proposes to appear and that his conduct and progress have been satisfactory. He shall be exempted from passing the preliminary examination and if he appears for the examination in Branch (ii) or (iii), he shall be exempted from examination in the subsidiary subject, and shall be credited with the percentage of marks which he obtained in that subject in the B.A. Degree Examination.

7. A candidate who has been awarded the B.A. Degree on the results of the B.A. (Honours) Degree Examination, shall be permitted to appear for the M.A. Degree Examination in the same subject in any subsequent year without the production of further certificates of attendance.

He shall also be exempted from examination in the subsidiary subject provided he has obtained not less than 30 per cent. of the marks in that subject in the Honours Examination.

S. A graduate in Arts who has qualified for the M.A. Degree under former Regulation 210-B, I (Calendar, 1918), in Branches of the B.A. (Honours) Degree Examination, may, after a lapse of five years from the date of his having passed the Intermediate Examination, proceed without further examination to the Degree of Master of Arts on payment of a fee of Rs. 25.

9. The examination for the Degree of Bachelor of Arts (Honours) in Branches ii and iii under the regulations previously in force (Calendar for 1918) shall be held under those regulations up to and including the year in which the first examination is held for the Degree of Bachelor of Science (Honours) in the corresponding Branches ii to vi.

10. (i) From 1919 every year in the month of April, there shall be an examination for Titles in Oriental Learning, comprising both the preliminary and final parts, under the revised regulations. No examination under the existing regulations shall be held after the year 1918.

When examination under Revised Oriental Title Regulations to begin

(ii) Candidates for Titles in Oriental Learning who

How to apply the new Regulations to candidates who began courses under the Old Regulations

(1) are able to produce certificates required under the existing Regulations of having completed at any time before the examination of 1918 the courses prescribed under those Regulations, or

(2) after completing three years of such courses by the end of academic year 1917-18 continue their studies satisfactorily for another year under the revised Regulations and produce certificates to that effect from heads of approved institutions, or

(3) are exempted by the Senate from the production of the prescribed certificates,

shall be permitted to appear for the examination in April, 1919, or any subsequent year and shall be allowed to sit for both the preliminary and final parts thereof. They shall be declared successful and eligible for receiving the diploma, if they obtain not less than forty per cent. of the total marks in all the papers relating to both the preliminary and final parts taken together; provided that, from the year 1920 those who obtain not less than forty per cent. of the total marks in the papers of the preliminary part alone shall be declared to have passed the preliminary examination and shall be admitted without any fresh certificate to the final examination in any subsequent year. Such successful candidates in both the parts taken together or in the final part shall be ranked and arranged in three classes as indicated in Regulation 13 of Chapter LXI.

Other candidates who have satisfactorily completed two years of the courses prescribed under the existing Regulations by the end of the academic year 1917-18 shall

be eligible for the certificate prescribed under Regulations 4 and 5 of Chapter LXI and may enter upon the course prescribed for the final examinations in any corresponding branch of study under the revised Regulations. Such candidates shall be admitted to the preliminary examination in April, 1919, and, if successful thereat, to the final examination in any subsequent year on the production of the prescribed certificate.

Other candidates who have satisfactorily completed one year of the course prescribed under the existing Regulations shall be deemed to have completed one year of the course in the corresponding branches of study under the revised Regulations.

(iii) Holders of Titles in Oriental Learning under the existing Regulations shall, at any time after the award of the diploma, be permitted to appear at the examinations held under the revised Regulations as candidates for certificates of proficiency in modern methods of study as applied to Oriental Learning. Such candidates shall not be required to produce the prescribed certificates of attendance at an approved institution.

Holders of Titles
under old Regula-
tions can appear
for Examination
for certificates

(iv) Candidates for the Vidvan title who passed the Preliminary Examination with Sanskrit held in April, 1919, shall take their Final Examination in accordance with the regulations in force in April, 1919.

Candidates for
Vidvan title who
passed Prelimi-
nary Examination
in 1919

(v) Notwithstanding anything to the contrary contained in Regulation 12-a of Chapter LXI and until the commencement of the academic year 1927-28, heads of institutions approved with reference to the Vidvan course mentioned under 2 (b) of Chapter LXI shall be empowered to permit any student to enter upon that Vidvan course in their respective institutions, who in their opinion is fit to do so.

(vi) Notwithstanding anything to the contrary contained in Regulation 12-a of Chapter LXI and until the date of the first departmental examination qualifying for admissions to the '*Sīromani* courses in *Jyotisa* and *Ayurveda* and for two years thereafter, heads of institutions approved with reference to Branch VI or Branch VII of the *Sīromani* course, shall be empowered to permit any student to enter upon that course in their respective institutions, who in their opinion is fit to do so.

(vii) In the case of students admitted prior to the commencement of the academic year 1928-29 into institutions approved for the Vidvan Course in Tamil alone, the admission test referred to in Law 12-a of Chapter LXI shall not be insisted upon.

11. Notwithstanding any provision to the contrary in the Regulations for the Degree of Bachelor of Science in Agriculture, candidates for the Degree who shall satisfy the Syndicate that prior to the affiliation to University of a College of Agriculture they have undergone instruction in and have completed the course of study prescribed for Part I of the examination for that degree, and have on the recommendation of the Syndicate been exempted by the Senate from the production of the certificates required for that part, shall be permitted to appear for both Parts of the examination for the degree in the same year, provided that they produce the certificates required for Part II of the examination.

Any such candidate who fails in not more than one subject in Part I of the examination and who obtains not less than 50 per cent. of the aggregate marks in that part shall be exempted from re-examination in the remaining subjects of that part and may appear again in any year for re-examination in the subject in which he has failed without the production of a further certificate, but shall not be eligible for the degree until he has passed the remaining subject of Part I in addition to Part II of the examination.

Any such candidate who fails in both parts shall be permitted to appear again for the examination in both

parts on the production of a certificate of having attended an affiliated college for an additional year of instruction.

Any such candidate who passes in Part II but fails in Part I of the examination shall not be required to present himself again for examination in Part II, but he shall not be eligible for the degree until he has passed Part I in accordance with Regulation 9 (a) of Chapter LI—Part I—Vol. I of 1931-32.

12. Candidates for the Intermediate Examination who commenced their courses of study for that Examination under the Regulations in force prior to the academic year 1927-28 shall be permitted to complete the Intermediate Examination under the above-mentioned Regulations, subject to the proviso that after the examinations of the year 1931 no candidate will be permitted to avail himself of this privilege and all candidates for the Intermediate Examination will thereafter be required to sit for the examination under the Regulations then in force.

13. On and after the 1st of June 1928 candidates for the Intermediate Examination, who completed the first year's course of study prescribed for the examination under the Regulations in force immediately prior to the academic year 1927-28 and were unable to complete the course under those Regulations will be permitted to complete the second year course of study by attending classes under the new Regulations and to appear for the Examination under the new Regulations, subject to the proviso that this Regulation will remain in force only until the expiry of the Examinations of 1931 and that thereafter no candidate will be permitted to avail himself of the benefit of these Regulations.

14. Candidates for the B.A. Degree Examination who have completed the Intermediate Examination under the Regulations in force prior to 1927-28 shall be permitted to appear for the B.A. Degree Examination under the New Regulations under the following conditions:—
- How Inter. Candidates of old Regulation can appear for B.A. under New Regulation**

They shall be exempted from the examination in language under Part II, but shall be required to take five papers in English under Part I, according to the Old Regulations, under Part III they shall take the papers set under the New Regulations.

For purposes of this Regulation the scheme of examination for English (under the Old Regulations) shall be as follows:—

	Hours.
Shakespeare	.. 3
17th and 18th Century Prose	.. 2½
Modern Poetry	.. 3
19th Century Prose	.. 2½
Composition	.. 3

The above Regulation shall be in force till the September Examinations of 1935. Thereafter, candidates will have to appear for the examination under Regulations then in force.

Under Shakespeare, the Old Regulation and the Transitory Regulation candidates will study only the three plays prescribed under the New Regulations and not the life and work of the author as under old Regulations.

The question papers shall be common to all candidates in Shakespeare and Modern Poetry and the papers in Prose and Composition shall be different.

15. Candidates for the B.A. Degree Examination who
 completed their courses of study and
 earned the prescribed certificates of
 attendance and progress for two years
 under the Regulations in force prior
 to the academic year 1929-1930, shall be
 permitted to appear for the B.A. Degree
 Examination under the same Regulations up to and inclu-
 sive of the examination to be held in September 1935.
 Thereafter every candidate shall be required to sit for the
 examination under the Regulations then in force.

16. Candidates for the B.A. Degree Examination,
 who completed the first year's course of
 study prescribed for the examination
 under the Old Regulations in force imme-
 diately prior to the academic year 1929-30
 and were unable to complete the course
 under those Regulations shall be per-
 mitted to complete the second year
 course of study by attending classes
 under the New Regulations. They shall,
 if they do not desire to appear for the examination under
 the New Regulations with all the three Parts have the
 option of coming under the provisions of Transitory Regu-
 lation 15 of Chapter XIV. (Vol. I, 1929-30) ;

(2) that the Transitory Regulation come into force
 forthwith and remain in force only until the close of the
 B.A. Degree Examination of 1935.

17. (1) A Bachelor of Arts of this University, after an
 interval of two academic years from the date of qualifying
 for that degree, may qualify for the Degree of Master of
 Arts (M.A.), by passing the prescribed examination in one
 of the following groups of subjects:—

I. Mathematics.

II. Philosophy.

III. History, Economics and Politics.

- IV. Economics and Politics or History.
- V. Two Languages other than English.
- VI. English Language and Literature.
- VII. Sanskrit Language and Literature.
- VIII. Arabic Language and Literature.
- IX. Dravidian Language and Literature.

The course of studies, syllabuses, subjects scheme of marks and time-tables for the examination for the Degree of Master of Arts shall be the same in all branches as for the Final Examination for the Degree of Bachelor of Arts (Honours) conducted in the year in the subjects in the corresponding Branch, provided that the candidates in the following Branches shall not be required to take the papers mentioned against each:—

Branch VI—English Language and Literature—
the two papers in division (c) of the Honours
Degree Examination, i.e., the special period or
subject;

Branch VII—Sanskrit Language and Literature—
the paper on Comparative Philology and
Grammar;

and that in Branch IV—Economics, Politics and History, candidates may offer either Economic History and any two of the three optional subjects prescribed for the Honours Degree Examination or all the six subjects other than the Economic History paper prescribed for the Honours Degree Examination (i.e., without the options specified as (5) and (6)); and provided that candidates for the M.A. Degree Examination shall take the optional (or special) subjects from the list prescribed under the existing B.A. (Hons.) Degree Regulations.

(2) A Bachelor of Arts of this University in a science subject (Physical or Natural Science) may, after an interval of two academic years from the date of

qualifying for that degree, qualify for the Degree of Master of Arts (M.A.) by passing the prescribed examination in one of the following groups or subjects.

- I. Physics, with Chemistry or Mathematics as a subsidiary subject.
- II. Chemistry, with Physics as a subsidiary subject.
- III. } Any two of the following subjects, one of
- IV. } which shall be the main subject and the
- V. } other the subsidiary subject:—

Botany.

Zoology.

Geology.

The course of studies, syllabuses, subjects, scheme of marks and time-tables for the examination in the Main and Subsidiary subjects shall be the same in all branches as for the Part II (Final) Examination for the Degree of B.Sc. (Hons.) conducted in the year in the subjects in the corresponding branch (in the main subject), wherever possible, provided that candidates for the M.A. Degree shall not be required to take the paper in any new subject included for the B.Sc. (Hons.) Degree Examination, viz., Modern Physics in Physics Branch, and the special subject in Botany, Zoology and Geology Branches, and provided further that candidates be permitted to offer only the optional subjects included in the list prescribed under the Regulations for the B.Sc. (Hons.) Degree.

The marks qualifying for a pass and the divisions of the subjects for the examination shall be the same as for the Honours Examination, wherever they are common and in other cases as under the Regulations in force for the examination of 1935.

Such Bachelors of Arts shall be permitted to appear for the examination after a further course of two years in a constituent or an affiliated college, and shall offer for

the examination in the main standard the same subject in which they have already qualified for the B.A. in the main standard.

Each such candidate shall forward so as to reach the Registrar before the examination, certificates, in the prescribed form from the Head of a constituent or an affiliated college of this University to the effect that the candidate has attended college for a period of at least two academic years after passing the B.A. Degree Examination, that he has completed the course of instruction in the subjects in which he proposes to appear, and that his conduct and progress have been satisfactory.

Each candidate shall submit his laboratory note-books containing the record of all his practical work performed during the period of study for the examination. The record shall be countersigned by the Professor or Professors under whom the candidate has worked certifying it to be a *bona-fide* record of work performed by the candidate. It should be submitted on the first day of the practical examination to the Examiners engaged in conducting the examination.

(3) Such Bachelors of Arts, when qualified, may, upon payment of the prescribed fee, proceed to the Degree of M.A. after a lapse of five years from the date of their having passed the Intermediate Examination.

(4) Nothing in these Regulations will, however, prevent a Master of Arts of this University from being allowed to appear again for the M.A. Degree Examination, with a view to qualify in any additional subject or subjects prescribed for that examination, upon payment of the prescribed fee.

(5) The M.A. Degree Examination under the above Regulations will be held in 1936 and 1937, or until the Regulations for the New M.A. Degree come into force if the coming into force of the Regulations for the New M.A. Degree should be later than 1937, provided that candidates

for the M.A. Degree Examination in the year 1935 may be allowed the option of taking the B.A. Honours Degree Examination either under the Old or under the New Regulations.

(6) Bachelors of Arts of other Universities whose degrees have been recognized for purposes of further study as equivalent to the B.A. Degree of this University may appear for the M.A. Degree Examination provided in sections (1) and (2) of this Regulation after taking a post-graduate course for two years for the B.A. (Honours) Degree in a constituent or an affiliated college.

18. The B.Sc. Degree Examination under Regulations in force prior to 1929-30 shall be held in the years 1931 and 1932, for the benefit of those candidates who have undergone the course of study under those Regulations. Such candidates shall, however, have the option of appearing for the examination under the Old or under the New Regulations. The option once exercised shall be final.

Such candidate shall also be exempted from the production of a certificate of having attended an additional year of instruction in the subjects in a college affiliated to or recognised by this University.

19. Candidates for the Intermediate Examination who completed their courses of study for that examination under the Regulations in force prior to the academic year 1927-28 but who did not pass the Examination either in whole or in part under those Regulations shall be permitted to sit for the Examination under the New Regulations subject to the following provisos:—

- (a) A candidate who has passed Part I of the Examination under the Old Regulations shall be considered to have passed Parts I and II under the New Regulations.
- (b) A candidate who has passed Part II of the Examination under the Old Regulations shall be considered to have passed Part III under the New Regulations.

- (c) A candidate who has failed in both Parts of the Examination under the Old Regulations or who did not sit for the Examination under the Regulations in force prior to 1927-28 though duly qualified for the prescribed annual certificates of attendance, etc., shall be required to pass in all the three Parts of the Examination under the New Regulations, provided that he selects for Part II of the Examination under the New Regulations the same language in which he appeared or was to have appeared for Part I-B of the Examination under the Old Regulations, and for Part III of the Examination under the New Regulations the same subjects in which he appeared or was to have appeared for Part II of the Examination under the Old Regulations.

APPENDIX I.

MATRICULATION EXAMINATION

(a) SYLLABUS

Detailed Syllabus in Theoretical Geometry

Angles at a point.—If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

Parallel straight lines.—When a straight line cuts two other straight lines, if

- (i) a pair of alternate angles are equal, or
- (ii) a pair of corresponding angles are equal, or
- (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

Triangles and rectilinear figures.—The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal; and the converse.

If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal; each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the intercepts made by them on any other straight line that cuts them are also equal.

Areas.—Parallelograms of the same altitude on the same or equal bases are equal in area.

Triangles of the same altitude on the same or equal bases are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities:—

$$\begin{aligned} k(a+b+c+\dots) &= ka+kb+kc+\dots, \\ (a+b)^2 &= a^2+2ab+b^2, \\ (a-b)^2 &= a^2-2ab+b^2, \\ a^2-b^2 &= (a+b)(a-b), \\ (a+b)^2-(a-b)^2 &= 4ab, \\ (a+b)^2+(a-b)^2 &= 2a^2+2b^2. \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

Loci.—The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

The locus of the vertices of all triangles which have the same base and the sum of the squares of their sides equal to a given square is a circle having its centre at the middle point of the base.

The locus of the vertices of all the triangles which have the same base and the difference of the squares of their sides equal to a given square is a straight line perpendicular to the base.

The locus of the vertices of all the triangles which have the same base and their vertical angles equal to a given angle is the arc of a segment of a circle.

The Circle—A straight line drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle and one only, which passes through three given points not in a straight line.

In equal circles (or, in the same circle) (i) if two arcs subtend equal angles at the centres, they are equal; (ii) conversely, if two arcs are equal, they subtend equal angles at the centres.

In equal circles (or, in the same circle) (i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semi-circle is a right angle; the angle in a segment greater than a semi-circle is less than a right angle; and the angle in a segment less than a semi-circle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse,

If a straight line touch a circle, and from the point of contact a chord be drawn the angles which the chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other; and the converse.

Elementary Science: (1) Physics, (2) Chemistry.

The examination shall test whether the subjects included in the following syllabus have been taught by the aid of experimental demonstrations—wherever this is possible. The application of physical and chemical facts and principles to experience in ordinary life should receive particular attention.

It is desirable that, as far as the accommodation and equipment of the school will allow, pupils receive practical instruction in the physical and chemical processes included in the syllabus.

1. Physics.—Measurement of length. Meaning of a unit and the measurement of a physical quantity. British and metric units; their multiples and sub-multiples. Derived units of area and volume. Measurement of area and volume.

Measurement of time. Unit of time. Rotation of the earth. Measurement by simple pendulum.

Speed: its measurement involving length and time; calculation of speed in given cases. Elementary ideas regarding acceleration. Illustration of first law of motion; definition of force.

Matter: definitions. Measurement of mass. British and metric units. Determination of mass by the spring balance, and by the ordinary balance. Density and specific gravity.

Gravitation. All matter attracted by the earth; illustration of Second Law of Motion: attraction is mutual: illustration of Third Law of Motion. Universality of gravitation. Weight of a body. Distinction between mass and weight.

Properties of matter. Extension, inertia, gravitation, divisibility, porosity, hardness, elasticity, transparency and opacity, ductility, malleability, brittleness, plasticity, viscosity. The three states of matter. Changes of state produced by heating and cooling. Permanent and temporary effects of heating different substances: effects on organic substances; tempering of metals.

Simple machines. The lever, its general principle and application to the common balance. The wheel and axle. The pulley. The inclined plane. Application of the screw.

Centre of gravity; definition. Experimental determination of centre of gravity in simple cases. Condition of equilibrium of a body resting in a given position; stable, unstable and neutral equilibria. The common balance; how mass is measured by weighing.

Solids: permanence of shape and volume which are only altered by application of forces.

Liquids: no permanent shape. Surface of liquid at rest horizontal. Definition of pressure and its evaluation; it acts in all directions equally, and is greater at greater depths. Transmission of pressure. The Bramah Press. The principle of Archimedes; its experimental proof and applications.

Gases: how distinguished from liquids. Gases have weight. Balloons. Pressure of the atmosphere; the mercury barometer; variation of atmospheric pressure with height proved by mercury barometer; the water barometer. Evaluation of pressure of atmosphere by means of barometer. Applications. Air-pump. Water pump. Pressure of a gas: Boyle's law.

Temperature. Liquids expand by heat; the special case of water. Thermometer used for measuring temperature by observing change of volume of liquid. The mercury thermometer; method of graduating; determination of fixed points; fundamental interval; the Centigrade and Fahrenheit scales. Thermal expansion of solids, liquids and gases.

Distinction between heat and temperature. Heat as a quantity and how it may be measured; the thermal unit. Specific heat. Changes of physical state due to heat. Fusion and the latent heat of fusion; evaporation and ebullition and the latent heat of vapourization. Water vapour present in the atmosphere and determination of its amount. Cooling produced by solution and evaporation; freezing mixtures. The conduction and convection of heat; convection currents in the atmosphere and ocean; the trade winds; land and sea breezes; the gulf stream. The circulation of water vapour in the atmosphere; clouds, rain.

Light. Rectilinear transmission. Rays and pencils of light; shadows, produced by different sources, and images of sources produced by pin-holes. The laws of reflection of rays of light; reflection of pencils by plane mirrors and images formed by plane mirrors. Direct reflection of pencils from concave spherical mirrors; experimental proof of law of distances. The laws of refraction of rays of light; refraction of rays through a plate and a prism. Refraction through a convex lens; experimental proof of law of distances; the principal focus of a lens. Image formed by a convex lens; the simple microscope: the photographic camera; the telescope. Analysis of white light by a prism; the method of producing, and order of colours in the spectrum. The spectra of sun-light, and of candle light. Recombination of the colours of the spectrum into white light.

Electrification by friction : positive and negative electrification. Laws of attraction and repulsion. Conductors and non-conductors. Simple voltaic cell; Grove's cell. Electric current. Magnetic effects of currents in straight and coiled wires. Simple galvanometer. Heating effects of currents. Simple facts of electrolysis.

Magnetic substances. Laws of magnetic attraction and repulsion. Magnetic induction. Methods of magnetization.

Graphic representation on squared paper of any relation between two of the physical quantities referred to in the syllabus.

2. *Chemistry*.—Examples of mixtures and solutions; (1) sand and sugar, (2) sulphur and iron filings, (3) sand and sal-ammoniac, (4) copper sulphate and water. Explanation of the process of separating the ingredients of these mixtures; filtration, decantation, mechanical or magnetic separation, evaporation, distillation, sublimation.

Chemical compounds. Characteristic differences between compounds and mixtures; illustrations.

Chemical combination illustrated by (1) candle burning in air, (2) sulphur burning in air, (3) magnesium wire burning in air, (4) quicklime combining with water.

Chemical decomposition illustrated by (1) heating mercuric oxide, (2) action of sodium on water, (3) heating potassium chlorate, (4) heating lead nitrate.

Iron in contact with air and water is converted into rust. Rusting is oxidation. Copper, lead, mercury, magnesium, sulphur and phosphorus also oxidize; but their oxidation takes place at different temperatures. Rapid oxidation. Combustion of candle; the products of the combustion are heavier than the candle itself. One of these products is a gas which turns limewater milky and it is the same product which is obtained when charcoal burns in air. Water is another product of the combustion. Similar observation may be made and similar conclusions deduced when oil burns in air. Structure of a candle flame.

The rust or oxide is always heavier than the substance from which it is formed. When a substance (e.g., iron or phosphorus) oxidizes in a confined volume of air about one-fifth of the air ultimately disappears. Remaining air is inactive (e.g., candle will not burn in it) Composition of air: air has two components: active (oxygen) and inactive (nitrogen).

Oxygen; its discovery; its mode of preparation and properties. Oxides; products formed when a candle, charcoal, sulphur, phosphorus, sodium or iron burn in oxygen. Burning in oxygen and air compared. Illustration of acid and alkaline properties.

Hydrogen produced by the action of sodium on water. Products of the decomposition. Same gas is produced when dilute sulphuric or hydrochloric acid acts on zinc, or on iron. Properties of hydrogen: its density and its combustion with air or oxygen. Water the sole product of their combustion.

Elements and compounds: Two ways of determining the composition of compounds (i) by synthesis, (ii) by analysis; illustrated by the case of water. Synthesis of water (i) by burning hydrogen in air or oxygen, (ii) by passing hydrogen over heated copper oxide. Analysis or decomposition (i) by action of sodium on water, (ii) by passing steam over red-hot iron filings, and (iii) by electric current. Composition of water by weight and by volume. Constancy of composition of chemical compounds illustrated by the case of water. Solvent action of water: crystallization, forms of crystals, water of crystallization. Solubility of gases in water, carbonic acid gas, air, and oxygen. Soda-water, spring, river, well, and sea-water. Suspended and dissolved impurities. Purification by distillation. Extraction of salt from sea-water by evaporation: salt pans.

Carbon; the different forms in which it occurs, their properties and uses. Carbon burnt in air or oxygen produces carbon dioxide. This gas is always formed when candles, oil, etc., burn. Its preparation and properties. Action on lime-water. Exhaled by living animals; action of plants on carbon dioxide. Solution of carbon dioxide in water and properties of the solution. Hard and soft water; permanent and temporary hardness. Methods of softening hard water.

Nitrogen, the inactive constituent of air; preparation and properties. Two of its important compounds, viz., nitric acid and ammonia.

(a) Nitric acid, its preparation from nitre and sulphuric acid. Its properties; power of dissolving copper and mercury and many other metals. Relations between acids, bases and salts illustrated by (1) nitric acid and caustic soda, (2) magnesium oxide and sulphuric acid, (3) lime and hydrochloric acid.

(b) Ammonia, its preparation and properties. Solubility in water; power of neutralizing acids and forming salts, such as ammonium chloride and nitrate; behaviour of these salts on heating.

Hydrochloric acid and chlorine. Treatment of common salt with sulphuric acid and production of hydrochloric acid gas. Properties of this gas; solubility in water. Production of chlorine from hydrochloric acid and manganese dioxide. Its properties; its power of combining with hydrogen and with metals, such as antimony, to form chlorides. Bleaching action of chlorine.

Sulphur; the different forms; their properties. The changes induced by heat—when burnt in air or oxygen produces sulphur dioxide. Sulphuric acid—its properties and uses.

Phosphorus; the different forms, their properties and uses.

Silicon; occurrence in nature. Chief compound silica. Occurrence of silica in nature, free and combined as silicates: Chief forms of silica, quartz, sandstone, flint.

Metals and non-metals, their general properties.

Sodium and potassium; their occurrence and properties. Distinguishing properties of the alkali metals; their more important compounds; common salt, Glauber's salt, washing soda, sodium bicarbonate, caustic soda, potassium carbonate, potassium chlorate, caustic potash, saltpetre, potassium permanganate. Gunpowder.

Calcium. Chief compound calcium carbonate. Its occurrence and various forms. Limestone burnt into lime in limekilns. Slaked lime. The use of lime in making mortar and plaster. Calcium sulphate; gypsum and plaster of Paris.

The occurrence, general method of preparation, properties and uses of the following Metals:—

Zinc, iron, copper, mercury, lead and silver. Their chief oxides and their salts which have been used or produced in experiments and illustrations included in the above syllabus.

Syllabus for the History of Great Britain and Ireland

Pre-Norman Period.—The early inhabitants of Britain: their modern descendants; what languages they speak; where they live. The Roman occupation; Agricola. The coming of the Eng'ish; their original homes; their chief tribes. The conversion of the English. Celtic and Roman Christianity; the supremacy of the latter; reasons and results. The struggle for supremacy between the Heptarchy Kingdoms: the supremacy of Wessex. The coming of the Northmen: who they were; the results of their coming. The struggle between Wessex and the Northmen: the victory of Wessex. Alfred: Athelstan: Edgar: Dunstan. The Danish conquest: reasons: Canute. The English line restored.

The Norman and early Plantagenet Period.—The Norman conquest; its causes and effects. Character of the Norman kings and of their rule. Feudalism. The opposition of the baronage to the royal power. The anarchy of Stephen's reign. Order restored by Henry II. His aims: his quarrel with Becket; reasons and results. The Reforms of Henry II. His foreign possessions; extent. His quarrel with the barons. The loss of Normandy: its effects. The baronage of a national party; struggle with John; the Great Charter. The weak rule of Henry III; subservience to

the Papacy: foreign favourites. The baron's war: Simon-de-Montfort, his character and aims. Revival of the monarchy under Edward I; effect of the baronial war seen in his reforms. The beginning of Parliament. The conquest of Wales, the attempted conquest of Scotland and France. Edward II's reign. Bannockburn: temporary supremacy of the baronial party.

The later Plantagenets.—Edward III's reign. The Hundred Years' War: causes: Sluys: Crecy: Poitiers: the treaty of Bretigny: the Black Prince. Increased power of the Parliament. Social and economic changes: the Black Death: its results. Wat Tyler: the peasants' rebellions. The attempted autocracy of Richard II; his overthrow. Literary activity; Langland, and Chaucer. The Lancastrian kings, the strength of Parliament at the beginning. Beginning of dynastic troubles. Early religious reforming movement; Wycliffe: the Lollards. Rebellions against Henry IV. Renewal of the Hundred Years' War: reasons: Havre, Agincourt: the treaty of Troyes. The minority of Henry VI; failure in the Hundred Years' War; reasons; close of Hundred Years' War: effects. Renewed social troubles. Outbreak of dynastic Wars of the Roses: causes: chief events. Warwick, the King-maker. The Yorkist Dynasty: its character and aims: reasons for its power. The effects of the Hundred Years' War on English political, commercial and social life.

The Tudor Period.—The strength of the Tudor possession of the throne. Their despotic rule. The overthrow of rival claimants. The final suppression of the old baronage. The creation of a new subservient baronage. The need for peace. Henry VII's Policy. Henry VIII's character. The career of Wolsey: foreign policy. Ecclesiastical reform: the Reformation in England: its causes. The overthrow of the Papal authority. The phases of the Reformation in England under Henry VIII. Edward VI, Mary and Elizabeth. Comparison with Continental Reformation: Luther and Calvin. Social results of the Reformation: the rebellions under Edward VI: Elizabeth's poor law. The jealousy of England and Spain: causes; English navigators; the development of English commerce. Elizabeth's foreign policy: the war with Spain: its results. Literary activity of the sixteenth century: its connection with the Reformation and the Renaissance. The three religious parties under Elizabeth: the Roman Catholics: the Anglicans: the Puritans: their aims and characteristics: chief sects of Puritans. The Anglicans supreme: policy of uniformity: absence of idea of toleration. The Puritans and royal political supremacy.

The Stuarts.—Kings and Parliament. The difference between the absolutism of the Tudors and the Stuarts. Suppression of the Roman Catholics: attempted suppression of the Puritans by James I. Growing hostility to royal power: the influence of Puritanism in the party of opposition. The chief points of dispute between the Crown and Parliament. The failure of Charles I's foreign policy: increased opposition met by further claims of the prerogative. The Petition of Right.

Temporary victory of the Crown. Renewed opposition over ship-money and Laud's religious policy. The Bishops Wars. Summons of Parliament. Early acts of Long Parliament. Outbreak of War: immediate and remote causes. Chief events of the war. The victory of the Parliament; reasons. Breach between the Parliament and the Army. The execution of Charles I. The Commonwealth: rule of Puritan minority. Cromwell in Ireland and Scotland. The Protectorate: Cromwell's character and aims. Reasons of his success and of the failure of his system. The Restoration: why possible. Net gains of the Rebellion. Puritan Literature: Milton: Bunyan. The despotic and catholic policy of Charles II and James II: the ministers of Charles II: his French intrigues. The Whigs and Tories: their respective aims. The Exclusion Bill. Temporary triumph of absolutism. Its overthrow at the Revolution: James' rashness compared with Charles' discretion.

The Bill of Rights: the triumph of Parliament. James II in Ireland: William III and Scotland. The beginnings of Party Government under William III and Anne: the unscrupulousness of party politicians: Harley: St. John: Marlborough. The reforms of William III: the Act of Settlement. The wars with France: causes. Marlborough as a general: the chief battles of the war. The treaty of Utrecht: English colonial gains.

The Hanoverian Period.—The Whig supremacy: Reasons for the discredit of the Tories. The 1715 rebellion. The rise and power of Walpole: his policy and methods. The establishment of Party Government with Prime Minister and Cabinet. The reasons for Walpole's long tenure of Office. The rise of an opposition. The Family Compact: hostility with Spain and France: reasons. Overthrow of Walpole. Whig supremacy continued with a war policy. The rise of the elder Pitt. The war of the Austrian succession: England's share in it; Colonial rivalry of France and England. The Seven Years' War: its phases: chief events. English gains in 1763. Pitt as a popular minister: his character and aims. The colonial policy of Pitt's successors: the loss of the American colonies. Chief events. Overthrow of the Whig supremacy; reasons for the weakness of the Whig party. Final check to royal control of politics.

II. *The Revolutionary Period.*—The Tory rule of the younger Pitt. Internal reforms and domestic policy of Pitt: comparison with the policy of Walpole. The outbreak of the French Revolution: Pitt forced into war. The revolutionary and Napoleonic wars: Chief events on sea and land. Death of Pitt: his character.

Nelson and Wellington: their careers and characters. Reasons for the success of England at sea. The role played by England in resisting the Napoleonic schemes. The downfall of Napoleon. Religious and literary activities of the period: Wesley, Burke. The industrial development: its nature and causes.

The 19th Century.—(1815—1902): The influence of the French Revolution in England. The great period of reform. Economic and social evils. their causes and remedies: riots: socialist movement: the Chartists: the repeal of the corn laws: Sir Robert Peel: Cobden and Bright and free trade: factory laws: the spread of education. Political reform: the extension of the franchise: Cabinet government: municipal reforms. Great ministers of the period: Russell: Palmerston: Disraeli: Gladstone; Salisbury. Colonial expansion during the period. Wars of the period; mainly frontier and colonial: the Crimean war: the Boer war: causes: results and chief events. The life and influence of Queen Victoria. Great poets and novelists of the century.

Syllabus in Indian History

The Pre-Mussalman Period:—

1. Physical configuration of India. Distribution of land and water: **mountains, rivers and the sea.** Position in relation to the rest of the world. Historical consequence of the foregoing.

2. The aboriginal and non-Aryan races.

3. The Indo-Europeans (so-called Aryans). Their immigrations and settlement. Aryan culture. Social and economic conditions. Caste (till circa 500 B.C.).

4. Social, economic, religious and political conditions in the sixth century B.C. Jainism and Buddhism. The growth of the kingdom of Magadha.

5. The satrapy of Darius (circa 500 B.C.). The invasion of Alexander. Its consequences and results.

6. Break-down of local independence. The Mauryan empire. Chandragupta. Asoka. Social, religious and economic conditions under the early Mauryans.

7. The disruption of the Mauryan empire. Rivalry between Brahmanism, Buddhism and Jainism and the Prakrit dialects and Sanskrit. The Sunga, Kanva and Andhra dynasties (circa A.D. 250).

8. Foreign influences, invasions and immigrations, Indo-Greek, Indo-Bactrian, Indo-Parthian, and Indo-Scythian dynasties. Revival of Buddhism. Kanishka's empire. Græco-Roman influence. The Great Satraps of the West. Religious and social conditions (till circa A.D. 300).

9. The Gupta dynasty and empire. Brahmanic revival. Literary activity. Religious and social conditions. Fa Hian.

10. The Huns, break up of the Gupta Empire.

11. The reign of Harshavardhana. Social, economic and religious conditions (till circa A.D. 650). Hiouen Tsang. The early Chalukyan empire in the Dekhan. The Pallavas in South India.

12. Minor local dynasties in North India—Kabul, Punjab, Sindh: Magadha, Kanouj, Delhi: Behar and Bengal: Bundelkhand and the Central Provinces: Ajmir, Malwa and Gujarat.

13. The empire of the Dekhan to circa A.D. 1300—The early Chalukyas, the Rashtrakutas, the later Chalukyas and the Yadvas of Devagiri.

14. The South Indian supremacy. The Pallavas. The Chola supremacy. Cheras and Pandyas. The Hoysalas and the Kakatiyas. Economic and social conditions. Dravidian literary and religious activity.

Medieval India (to circa 1761):

1. Early Muhammadan invasions.

2. Mahamud of Ghazni, Mahamud Ghori. The Slave, Khilji and Tuglakh, Shahi dynasties, Social, religious and literary conditions (circa A.D. 1400).

3. Break up of the empire of Delhi. Local Muhammadan dynasties in Jaunpur, Bengal, Malwa and Gujarat.

4. The Bahmini Kingdom of the Dekhan: its break up, 1526: final conquest and absorption by the Mughal Empire.

5. History of the empire of Vijayanagar till A.D. 1565. The successors of Vijayanagar to circa 1750.

6. Rajputana till A.D. 1556.

7. The Great Mughals 1526-1707.

8. The Marathas to 1714.

9. Routes of Indo-European trade. The Saracen conquests, and the results in Indo-European commerce. The age of discovery. The Portuguese in India. Albuquerque. Causes of the decline of Portuguese power in India (till circa 1600).

10. The decline of the Mughal empire, 1707-1761. The Maratha conquests, 1714-1761. Rise of the Sikhs. Panipat.

Modern India (down to the death of the Queen-Empress).

1. Importance of sea power in Indian History. Early English attempts to reach India. Rivalry between the Dutch and the English till 1623. The French in India till 1741.

2. The Karnatic Wars. Dupleix and Clive. French supremacy in South India. The English in Bengal. The Black Hole tragedy. Plassey. Final French attempts. Coote and Lally (till 1761).

3. The administration of Bengal, 1758-1771.
4. Rise of Haidar Ali. The First Mysore war, The revival of the Maratha confederacy. Madhava Rau, Peshwa (till 1772).
5. Warren Hastings.—English politics and Indian affairs (1748-72). The Regulating Act. Rohillas. Benares. The first Maratha and second Mysore wars. Effects of the American war. Suffren on the Indian seas. The First Armed Neutrality. Successful end of Hastings' administration. His work. Pitt's India Bill.
6. Cornwallis and Sir John Shore.—The Mysore war. Economic and administrative reforms. The policy of non-intervention.
7. Wellesley.—England and revolutionary France. War with Tipu. The second Armed Neutrality. The battle of Aboukir Bay. The Subsidiary System. Second and third Maratha wars. Minor reforms. Wellesley's work.
8. Cornwallis and Minto. Administrative reforms. Conference of Tilsit. Capture of Java.
9. Marquess of Hastings and Lord Amherst. Ghurka war. The Pindari war. Last Maratha war. Extinction of the Peshwa-ship. First Burmese war. The Bhartpur affair. Internal affairs.
10. Bentinck.—His reforms.
11. Auckland and Ellenborough.—Rise and history of Ranjit Singh. Afghanistan and the Punjab. The first Afghan war and the 'avenging expedition.' Conquest of Sindh. Gwalior affairs.
12. Hardinge and Dalhousie.—The first and second Sikh wars. Annexation of the Punjab. The second Burmese war. The 'doctrine of lapse.' Dalhousie's annexations. Railway and Telegraph.
13. Canning.—The Mutiny. Canning's clemency. The Queen's proclamation. India under the Crown. Financial and Military reforms.
14. India under the Crown to the death of the Queen Empress Victoria.

Geography

1.—Southern Continents.

Australia.

1. Relief and Rivers of Australia.
2. Climate of Australia. The seasonal distribution of temperature and rainfall.

3. Vegetation and animals; relation between rainfall and natural vegetation regions of Australia; peculiarity of its animal life.

4. Life and work of the people with special reference to (a) East Coast Region, (b) Murray-Darling Basin, (c) Mediterranean regions of West Australia and Victoria.

5. Favourable position for trading with lands around the Pacific and Indian Oceans.

Africa.

6. Structure—effect upon the coastline, rivers and lakes of Africa, relief and drainage.

7. Climate and vegetation of Africa; apparent seasonal migration of the sun and the duplication of climatic and vegetation belts North and South of the Equator.

8. Chief Natural Regions of Africa.

9. Peoples of Africa.

10. Trade routes of the Indian Ocean.

South America.

11. Structure and relief; rivers.

12. Climate and vegetation of South America; the effect of a mountain barrier, of a cold current and of altitude upon rainfall and temperature; Andean Zones.

13. Peoples and States of South America; the importance of minerals in the past and present development of the continent.

14. Temperate countries of South America—Argentina, Uruguay and Chile.

15. Tropical countries of South America—Brazil—the world's chief storehouse of tropical products.

16. Revision of the three southern continents.

II.—North America.

1. Structure and relief; the work of rivers as illustrated on a large scale by the Colorado and the Mississippi and as seen by actual observation of local streams.

2. Climate and vegetation; factors that modify climate as evidenced in North America; natural regions of North America.

3. Population and political divisions; Immigration.

4. *United States—*

- (a) North-eastern industrial and commercial region.
- (b) South-eastern plantation region.
- (c) Central farming region.
- (d) The basins and mining regions of the Rockies.
- (e) Pacific shorelands—fruit, grain, timber and minerals.

5. *Dominion of Canada and Newfoundland—*

- (a) Eastern Canada—agriculture, dairying, timber, fisheries, mining and manufacture.
- (b) Prairie provinces.
- (c) British Columbia.

6. *Mexico, Central America and West Indies.*

7. Transport and communication of North America and important links in round-the-world routes.

III.—Eurasia and India.

1. Surface, relief and rivers of Eurasia.

2. Climate of Eurasia; the major climatic regions, comparison of temperature conditions on east and west margins; effect of latitude and distance from the sea on range of temperature, causes of monsoons and their effect on climate of South-east Eurasia.

3. British Isles; relief; influence of the sea and the climate upon the life and activities of the people; fisheries and farming; the chief industrial regions and their outlets.

4. Western Mainland of Europe.—France—agriculture and industry; position of Paris and Marseilles. Belgium—plain of Flanders and the Sambre-Meuse Valley. Holland—a delta land reclaimed from the sea; its colonies and sea trade. Denmark—co-operative dairy farming. Germany—plain and plateau, forestry and development of special industries; industries of the Ruhr and Saxon coalfields.

5. Baltic Region—the new border states, Scandinavian peninsula—forestry and woodwork of Sweden.

6. Central Highlands of Europe; Czecho-Slovakia—its minerals and industries; agriculture of the Mid-Danubian plain. Alpine region—development of hydro-electric power and effect on industrial development.

7. Mediterranean region—influence of climate on plant adaptation and fruit culture. Spain—its mineral wealth but lack of coal. Italy—alluvial plain of Lombardy and its industrial development—peninsular Italy.

8. South-western lands of Asia—region of plateau and deserts with one important alluvial plain; its historical importance as a highway.

9. Central and Northern Eurasia—rich wheat and pasture lands of Rumanian and Russian plains—desert conditions of the Aral Sea Basin; tundra, taiga and steppe of Siberian plain, contrast development of this region with similar region in North America.

10. China—her dependencies. Effect of climate and relief upon occupations and industries.

11. Japan. A mountainous country, yet productive; agricultural, mineral and industrial development—importance of Korea.

12. South-east Asia and the East Indies.

13. Position, relief, soils and minerals of India and Burma.

14. Climate of India; her chief climatic regions; means of irrigation.

15. Vegetation and animal life of India.

16. Peoples of the Indian Empire.

17. Survey of the Provinces and States—

(a) Mountain States.

(b) Great Plain.

(c) Plateau states and provinces.

(d) Madras.

(e) Bombay.

18. Occupations and Industries of India.

19. Trade, transport and seaports.

20. Ceylon.

IV.—*The World.*

1. Studies in climate—size and shape of the earth—movements of the earth, day and night, the seasons, annual and seasonal distribution of temperature, pressure, winds and rainfall, ocean currents, natural vegetation.

2. Regions of the world—

(1) Tundra and Ice-cap.

(2) The Cold Forests.

(3) Broad-leaved Forests.

(4) Temperate grasslands.

(5) Mediterranean Lands.

(6) Desert Lands.

(7) Equatorial forests and tropical grasslands.

(8) Monsoon Lands.

(9) Islands of the Pacific.

- (10) High mountain and plateau.
- (11) Industrial Regions of Europe.
- (12) Industrial Regions of North America.
- (13) Regions of the Empire.

Books recommended.

Text-Books—

- (1) The New Regional Geographies—Book IV, The World, Leonard Brooks; London University Press.
- (2) Any one of the following:—
 - (a) India, World and Empire, Herbert Pickles; Oxford University Press.
 - (b) Our World, Morrison; Macmillan.
 - (c) இந்திய ராஜ்யம் அம்மளம், Morrison and Subrahmanyam; Macmillan.
 - (d) A Secondary School Geography by Dudley Stamp. (Longmans, Green & Co.).
- (3). The following Atlases are recommended:—
 - Longmans' Senior Atlas or the Taj Mahal Atlas, (Longmans, Green & Co.).

Reference books.—

- (1) Physiography, Herbertson; Oxford University Press.
- (2) Every one's Book of the Weather, Franco Williams, Sheldon Press.
- (3) Out-door Geography, Hatch; Blackie.
- (4) Surface of the Earth, Pickles; Cambridge University Press.
- (5) Human Geography for Secondary Schools, Fairgrieve and Young; G. Philip & Son.
- (6) A Graded Course of Geography, E. S. Price; G. Philip & Son.
- (7) The Rambler Travel Books; Blackie.
- (8) The World, Howarth & Bridewell; Oxford University Press.

(b) TEXT-BOOKS FOR THE EXAMINATION OF 1938.

ENGLISH, 1938.

The Selections in English to be published by the University for the S.S.L.C. Public Examination, 1938.

HISTORY, 1938.

The following periods are prescribed for the Matriculation Examination of 1938:—

- (i) History of England—From 1485 to 1688.

Text-book—

Britain and Her Neighbours—Book V—1485-1688—The New Liberty (Blackie & Son).

Reference Books.—

A Concise History of Britain from 1485-1714, Robert M. Rayner (Longmans, Green & Co.).

A History of Great Britain, 1485-1714—R. B. Mowat (Oxford University Press).

(ii) History of India—The Moghul Empire—1526-1707.

Text-book.—

Muhammadian Period by Garrett and Kohli (Longmans, Green & Co.).

Reference books.—

1. Oxford History of India by V. A. Smith.

2. Mediaeval India by Lane Poole.

3. History of India—Part II by C. S. Srinivasachari and M. S. Ramaswami Ayyangar.

4. The Moghul Empire by Edwards.

SANSKRIT, 1938.

The Selections in Sanskrit to be published by the University for Group A of the S.S.L.C. Public Examination, 1938.

MARATHI, 1938.

Prose.—

Rassales by K. S. Chiplunkar.

Poetry.—

The following extracts from the Navanita:—

Moropant—Kekavali.

Waman Pandit—Sphuta Shloka.

Ekanath—Angada Shishtayl.

N.B.—The above books can be had at New Kitab Khana, Poona City, or Messrs. Parachure Puranick and Company, 'Madhav Bagh', Bombay.

ORIYA, 1938.

The Selections in Oriya to be published by the University for Group A of the S.S.L.C. Public Examination, 1938.

HINDI, 1938.

The same as for the S.S.L.C. Public Examination, 1938, viz.—

Detailed Study.—

Matriculation Hindi Selections, 1937 (Calcutta University), by Rai Bahadur Lala Nitaram and Sanyal. (The Kamala Book Depot, Ltd., 15, College Square, Calcutta), Price Rs. 2.

Portions prescribed.—

Prose.—

	Pages.
1. Bir Singh Ka Brittanta	3 to 15
2. Mahakavi Kalidaska Charitra	19 to 30
3. Dara Shikah ki har am uska Vadha ..	32 to 56
4. Mira Bai	81 to 93

Poetry.—

1. Sundar Kanda by Tulsi Das—Pages 4 to 30 (560 lines).
2. Anand Arunodaya by Chandri Badrinarayan Upadhya—Pages 73 to 78—(88 lines).

Non-detailed Study.—

Galpa Ratna by Shri Premchandji. (Saraswati Press, Benares City). Price Re. 1.

Pieces to be read—

	Pages.
1. Ansuon ki holi Bare ghar ki Bati ..	72 to 99
2. Nyaya Mantra Andhere May	115 to 144
3. Burhapa	147 to 156
4. Adarsha	159 to 180
5. Lal Jhandi	183 to 201

LATIN, 1938.

Cæsar: De Bello Gallico, Book I, Chapters 1—29.

Phædrus: Fables I, (Macmillan).

FRENCH, 1938.

Florian: Select Fables (Macmillan).

Hugo: Cosette (Macmillan).

GERMAN, 1938.

Text-books will be prescribed, if required.

HEBREW, 1938.

Psalms, 1 to XV.

Genesis, Chapters XXVII to XXXV.

Grammar.—

Moses Rath's Hebrew Grammar.

SYRIAC.

Prose.—

Some Fables. (Thirty-eight Fables given in Chresthomathy of Dr. Gismondi. Pages 7 to 18—Syriac Grammar and Chresthomathy. Edited Rome 1913).

Gospel of St. John. Chapters I to IV inclusive.

Poetry.—

St. Ephrem on Satan and Death. Syriac Grammar and Chresthomathy of Dr. Gismondi. Page 93-94.

Grammar.—

Paradigms and Exercises in Syriac, by T. H. Robinson.

ARABIC AND PERSIAN, 1938.

The same as for the S.S.L.C. Public Examination of 1938, viz:—

Arabic.—

Alqiratur Rashida—Part II (whole book). For memorizing—
All poems in the book.

Persian.—

Ganjeena-e-Adab by Jalaluddin Ahmed Ja'feri—

Prose—Pages 1 to 116.

Poetry—Pages 159 to 194.

For memorizing—Bab-e-Du'am, complete.

Pages 166 to 170.

Note.—The books are available at the Islamiyah Book Depot,
Kurnool.

TAMIL, TELUGU, KANNADA, MALAYALAM,
AND URDU, 1938.

Selections for the S.S.L.C. Public Examination, 1938, to
be published by the University in the respective languages.

TEXT-BOOKS FOR THE EXAMINATION OF 1939.

ENGLISH, 1939.

Text-book will be prescribed later.

HISTORY, 1939.

The period and Text-books will be prescribed later.

SANSKRIT, 1939.

Same as for the S.S.L.C. Public Examination of 1939.

MARATHI, 1939.

The same as for 1938, viz.—

Prose.—

Rassales by K. S. Chiplunker.

Poetry.—

The following extracts from the Navanita:—

Moropant—Kekavali.

Waman Pandit—Sphuta Shloka.

Ekanath—Angada Shishtayi.

(The above books can be had at New Kitab Khana, Pootha
City, or Messrs. Parachure Puranick and Company,
"Madhav Bagh", Bombay).

ORIYA, 1939.

S.S.L.C. Selections in Oriya for 1939.

HINDI, 1939.

The same as for the S.S.L.C. Public Examination of 1939.

LATIN, 1939.

Caesar: De Bello Gallico Book I, Chapters 1—29.

Phædrus: Fables, Book I.

FRENCH, 1939.

V. Hugo: Cosette (Macmillan).

Florian: Fables (Macmillan).

GERMAN, 1939.

Text-books will be prescribed, if required.

• HEBREW, 1939.

Psalms, 1—15 and Genesis, Chapters 27—35.

• *Grammar*: Moses Rath's Hebrew Grammar.

SYRIAC, 1939.

Text-books will be prescribed later.

ARABIC, PERSIAN AND URDU, 1939.

Texts-books will be prescribed later.

TAMIL, TELUGU, KANNADA AND MALAYALAM, 1939.

Selections for the S.S.L.C. Public Examination of 1939, to be published by the University in the respective languages.

APPENDIX II.

INTERMEDIATE EXAMINATION IN ARTS
AND SCIENCE.

(a) Syllabus.

(1) MATHEMATICS.

In addition to the subjects prescribed for the Matriculation, the courses shall comprise Algebra, Plane Trigonometry and Geometry. A candidate shall be required to be acquainted with the use of logarithmic tables and to be able to solve questions by graphic methods, and to have an experimental knowledge of the simple geometrical solids and their sections.

(a) *Algebra*.—Algebraical laws and principles and their applications. Ratio and proportion. Theory of indices. Variation. Simple surds. Equivalence of system of equations. Solution of equations of the second degree in one or two variables and of equations of higher degree whose solution depends on them. Theory of the equation and expression of the second degree in one variable. The three progressions and other series whose summation depends on arithmetical and geometrical series. Interest and annuities. Permutations and combinations. The Binomial theorem for a positive integral exponent and direct applications of the theorem for any exponent. Elementary theory of logarithms and their applications to arithmetical computation. Problems on the above.

(b) *Plane Trigonometry*.—Measurement of Angles. Trigonometrical functions and their relations to one another. Solution of simple trigonometrical equations. Addition, multiplication and division formulæ. Properties of triangles and of the circles connected with them. Solution of triangles. Application of logarithms to trigonometrical computations. Measurements of heights and distances.

(c) *Geometry—Experimental*.—Construction of scales and their use. Construction of similar figures. Construction of the circumscribed, inscribed, escribed and other associated circles of triangles, and polygons. Constructions from data of triangles, quadrilaterals and polygons and their division in any given ratio. Areas of polygons and problems relating thereto.

Theoretical.—Ratio and proportion. Similar figures. Concurrence and collinearity. Properties of triangles. Properties of circles. Loci. Elementary maxima and minima. Proofs of the constructions in *Experimental Geometry*. Easy deductions.

DETAILED SYLLABUS IN THEORETICAL GEOMETRY.

N.B.—*The order in which the theorems are stated in this Syllabus is not imposed as the sequence of their treatment.*

Ratio and Proportion.—Definition and elementary theorems connecting the antecedents and consequents.

A given straight line can be divided internally in a given ratio at one, and only one point; and externally at one, and only one point.

A straight line drawn parallel to one side of a triangle cuts the other two sides, or those sides produced, proportionally; and the converse.

If the vertical angle of a triangle is bisected internally or externally, the bisector divides the base internally or externally into segments which have the same ratio as the other sides of the triangle: and the converse.

In equal circles, angles, whether at the centres or circumferences, have the same ratio as the arcs on which they stand.

Triangles and parallelograms of equal altitude are to one another as their bases.

If two triangles have one angle of the one equal to one angle of the other, their areas are proportional to the rectangles contained by the sides about the equal angles. Similarly for parallelograms having one angle of the one equal to one angle of the other.

Similar Figures.—If two triangles are equiangular their corresponding sides are proportional: and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional, the triangles are similar.

Two triangles are similar, if the sides of the one are respectively parallel or perpendicular to the sides of the other.

If two triangles have two sides of the one proportional to two sides of the other, and an angle in each opposite one corresponding pair of these sides equal, the angles opposite the other pair are either equal or supplementary.

If from the right angle A of a right-angled triangle ABC, AD is drawn perpendicular to BC, then (1) AD is the mean proportional between BD and DC, (2) BA is the mean proportional between BD and BC and (3) CA is the mean proportional between CB and CD.

If two triangles are similar, their corresponding lines (such as medians, altitudes, inradii, etc.) are to one another in the ratio of their corresponding sides.

Similar triangles are to one another as the squares on their corresponding sides.

Two similar polygons can be divided into the same number of triangles similar to each other and similarly placed; and the converse.

The perimeters of two similar polygons are to each other as any corresponding sides.

Areas of similar polygons are proportional to the squares on corresponding sides.

Concurrence and Collinearity.—The use of signs as applied to lines, angles and areas. If two parallel lines are cut by three or more concurrent transversals, the corresponding segments are proportional; and the converse.

If X, Y, Z, are points in the sides BC, CA, AB of a triangle ABC, such that the perpendiculars to those sides at these points are concurrent, then

$$(BX^2 - XC^2) + (CY^2 - YA^2) + (AZ^2 - ZB^2) = 0;$$

or

$$BX^2 + CY^2 + AZ^2 = CX^2 + ZB^2 + AY^2,$$

and the converse.

If any transversal meets the sides BC, CA, AB of a triangle in D, E, F, then

$$AF \cdot BD \cdot CE = AE \cdot CD \cdot BF;$$

and conversely, if three points D, E, F taken on the sides BC, CA, AB of a triangle, satisfy the relation $AF \cdot BD \cdot CE = AE \cdot CD \cdot BF$, then D, E, F, are collinear.

If the lines joining any point to the vertices A, B, C of a triangle meet the opposite sides in D, E, F;

$$\text{then } AF \cdot BD \cdot CE = FB \cdot DC \cdot EA;$$

and conversely, if three points D, E, F, taken on the sides BC, CA, AB, of a triangle, satisfy the relation $AF \cdot BD \cdot CE = FB \cdot DC \cdot EA$, then AD, BE, CF, are concurrent.

If two unequal similar figures are similarly placed, the lines joining the vertices of one to the corresponding vertices of the other are concurrent.

Properties of Triangles.—The three medians of a triangle meet in a point, and this point is a point of trisection of each median, and also of the line joining the circumcentre to the orthocentre.

If D is a point in the side BC of a triangle ABC such that $BD = \frac{1}{n} BC$, then

$$(n-1) AB^2 + AC^2 = n \cdot AD^2 + (1 - 1/n) BC^2.$$

The perpendiculars from the vertices of a triangle on the opposite sides meet in a point, and the distance of each vertex from the orthocentre is twice the perpendicular distance of the circumcentre from the side opposite to that vertex.

The circle through the middle points of the sides of a triangle passes also through the feet of the perpendiculars of the triangle and through the middle points of the three lines joining the orthocentre to the vertices of the triangle.

If a perpendicular drawn from the vertex to the base of a triangle is produced to meet the circumcircle, then the distance of this point of intersection from the base is equal to the distance of the orthocentre of the triangle from the base.

The feet of the perpendiculars drawn on the sides of a triangle from any point P on the circumcircle of that triangle are collinear.

The pedal line of P bisects the line joining P to the orthocentre of the triangle.

If the vertical angle of a triangle is bisected by a straight line which cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base together with the square on the straight line which bisects the angle.

If from the vertical angle of a triangle a straight line is drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

Properties of Circles.—The locus of the points of intersection of tangents drawn at the extremities of chords of a circle which pass through a fixed point, is a straight line.

If the polar of A passes through B, then the polar of B passes through A.

If P and Q are any two points in the plane of a circle whose centre is O, then OP bears to OQ the same ratio as the perpendicular from P on the polar of Q bears to the perpendicular from Q on the polar of P.

The locus of points from which the tangents to two given coplanar circles are equal is a line perpendicular to the line of centres.

In two circles, if any two parallel radii are drawn (one in each circle), the straight line joining their extremities cuts the line of centres in one or other of two fixed points called (centres of similitude).

If through a centre of similitude of two circles, a line is drawn cutting the circles, the radii to a pair of corresponding points are parallel.

If through a centre of similitude S of two circles, a line is drawn cutting the circles, then the rectangle under the distances of one pair of non-corresponding points from S is equal to the

rectangle under the distances of the other pair of non-corresponding points from S: and each of these rectangles is constant.

In a cyclic quadrilateral the rectangle contained by the diagonals is equal to the sum of the rectangles contained by the opposite sides.

Loci.—If from a fixed point O a variable line is drawn, and in it points P, Q are taken, so that the ratio of OP to OQ is constant then (1) if P moves along a straight line, the locus of Q is a parallel straight line; (2) if P moves along the circumference of a circle, the locus of Q is a circle.

The locus of a point which is such that the rectangle under its distances from the equal sides of an isosceles triangle is equal to the square on its distance from the third side, is the circle which touches equal sides at the extremities of the third side.

If A, B are fixed points, and P a variable point, such that the ratio of PA to PB is one of constant inequality, then the locus of Q is a circle.

Given the base and vertical angle of a triangle, find the locus of (1) its incentre, (2) orthocentre, (3) centroid, (4) excentres.

If a triangle ABC of given species has one corner A fixed, another B always on a fixed line or circle, then the locus of C will be a line or circle.

Elementary Maxima and Minima.—When two sides of a triangle are given in length, the area of the triangle is greatest when they are placed at right angles.

The maximum triangle which can be inscribed in a given segment of a circle is that formed by joining the middle point of its arc to the extremities of its chord.

If A, B are two fixed points, and XY a fixed line; then for that point P in XY at which AP, BP make equal angles with XY,

(1) $AP \times PB$ is minimum, if A, B are on the same side of XY.

(2) $AP \times BP$ is maximum, if A, B are on opposite sides of XY.

If A, B are fixed points and P any point in a fixed line, the angle APB will be maximum, when the circle APB touches the fixed line.

Of all triangles having the same base and equal area the isosceles triangle has the minimum of perimeter.

The maximum of isoperimetric triangles on the same base is the one whose other two sides are equal.

Of all polygons having all sides given but one, the maximum can be inscribed in a semi-circle having the undermined side as diameter.

Of all isoperimetric polygons of the same number of sides, the equilateral is the maximum.

If P is any point in a given straight line AB, AP, PB, is maximum and $AP^2 + PB^2$ is minimum when P is the middle point of AB; of all rectangles, of given area, the square has the minimum perimeter.

The maximum parallelogram which can be inscribed in a triangle by drawing parallels to two of its sides, is that formed by drawing the parallels from the middle point of the third side.

(2) PHYSICS.

Theory.

No question shall be asked which cannot be answered by simple mathematical methods.

The course shall include a more detailed study of the matter included in the Matriculation syllabus and in addition the following:—

• *Dynamics.*—The units of length and time. Displacement, speed, velocity and acceleration of a particle moving in a straight line. Newton's laws of motion; the units of mass and force. Motion of a particle in a straight line under the action of a force in that line. Motion under the action of gravity. Energy, work, power and their units; simple illustrations of the conservation of energy.

*Conditions of equilibrium of a body under three concurrent forces (the parallelogram law), and under parallel forces. Centre of gravity. Simple machines. The simple pendulum; determination of g .

Hydrostatics.—Pressure at a point in a fluid; definition and illustrations; transmissibility of pressure. Evaluation of pressure at a point in a heavy fluid at rest; its uniformity in all directions. Resultant thrust in simple cases. The principle of Archimedes; floating bodies, and hydrometers. Applications to practical determination of density and specific gravity. The pressure of a gas and its determination; the barometer. Boyle's law. Air pumps and water pumps.

Heat.—Temperature and its measurement; the construction and graduation of thermometers. The thermal expansion of solids, liquids and gases and their accurate determination; the air thermometer. Heat as a quantity; the unit of heat. Specific heat and the more direct methods of calorimetry.

Laws of fusion, evaporation and ebullition; latent heat. Vapour pressure and how it is measured; hygrometers. Conduction and convection of heat; thermal conductivity. Radiation; absorption and reflection; law of cooling. The dynamical equivalent of heat and its determination.

Light.—The experimental facts and laws of transmission; reflection and refraction of light; simple geometrical deductions from these, applicable to small direct pencils incident on plane and spherical surfaces, prisms and lenses. Applications to optical lantern, spectacle lenses, telescope and microscope. Total reflection. Dispersion of light; the spectrometer. Radiation and absorption spectra. Determination of refractive indices.

Magnetism.—Properties of magnets: poles. Laws of magnetic force; unit poles. Lines of force; uniform magnetic fields and experimental methods of comparing them. The earth's magnetic field; the compass. Magnetic induction; the magnetic properties of iron and steel.

Electricity.—The more common forms of primary cells and the actions that go on in the cells while producing current. The action of currents on magnets; galvanometers depending on such action—including suspended coil type. Metallic conductors and electrolytes; laws of electrolysis. Comparison of e.m.f.'s by the potentiometer. Ohm's law. Simple methods of measuring current and resistance. Wheatstone's bridge. Heating effects of current; fuses and lamps; Joule's law. The electro-magnet and its simpler applications.

Sound.—The production and propagation of sound; the velocity of sound in air and its determination. Nature of wave motion and sound waves. Frequency of vibration; pitch. Amplitude of vibration; loudness. The reflection of sound; echoes.

*Laws of vibration of strings and air columns.

N.B..—An asterisk* before a paragraph means that for the topics included only experimental proofs are required.

Practical Physics for the Intermediate course.

The following scheme is not exhaustive, but is intended to indicate the general nature and extent of instruction in Practical Physics for the Intermediate Course:—

Measurement of length by millimeter scale, vernier, micro meter-gauge and spherometer.

Measurement of area and volume.

Verification of conditions of equilibrium of a body under coplanar forces.

Determination of the centre of gravity of a thin plate.

Verification of the law of the simple pendulum: determination of g .

The inclined plane.

Systems of pulleys.

Use of a balance sensitive to $\cdot 01$ gram.

Determination of volume by weighing in water; determination of capacities of vessels.

Specific gravities of solids and liquids; hydrometers.

Reading Fortin's barometer and correcting for temperature

Verification of Boyle's law.

Determination of fixed points of a thermometer.

Determination of co-efficient of expansion of a rod.

Determination of co-efficient of apparent expansion of a liquid.

Expansion of air at constant pressure.

The constant volume air thermometer.

Curves of cooling.

Melting points.

Determination of specific heats of solids and liquids.

Latent heat of water and steam.

Determination of vapour pressures.

Boiling points.

Use of Regnault's (or Dine's) and the wet and dry bulb hygrometers.

Comparison of thermal conductivities.

Radiation of heat from different surfaces.

Determination of the mechanical equivalent of heat.

Verification of the laws of reflection.

Tracing the path of a ray of light through a block of glass and deduction of refractive index.

Focal lengths of concave mirrors and convex lenses.

Arrangement of 2 lenses for telescope, microscope, and optical lantern.

Measurement by spectrometer of the angle of a prism, and the angle of minimum deviation for sodium light; calculation of refractive index.

Use of simple photometers.

Tracing the lines of force in a magnetic field.

Comparison of magnetic moments.

Comparison of strengths of magnetic fields by vibration.

Study of the simple Voltaic cell, and the Daniell and Leclanche cells; the dry cell; the accumulator.

Measurement of current (i) by tangent galvanometer, (ii) by electrolysis.

Measurement of heat developed by current.

Measurement of resistance of wires.

Comparison of electromotive forces.

Verification of laws of transverse vibration of strings.

Determination of velocity of sound by resonance.

Books for Study—

The Syllabus for the Intermediate Examination is *approximately* covered by one or more of the following books:—

Crowther, J. A.: Manual of Physics.

Houstoun: Intermediate Physics.

Joseph: Intermediate Physics.

Nightingale: Experimental Hydrostatics and Mechanics.

„ Heat, Light and Sound.

„ Magnetism and Electricity.

Shackel: Heat, Light and Sound.

„ Modern School Electricity and Magnetism.

Venkatachari: Intermediate Physics; 2 Vols.

Davis and Black: New Practical Physics.

Reference—

Duncan and Starling: Text-book of Physics (Macmillan).

Brown, S. E: Sound (Cambridge University Press).

Krishnaswami, T. S.: Sound (Murthi Brothers).

(3) CHEMISTRY.

The course shall include a more detailed study of the matter included in the Matriculation syllabus and in addition the following:—

The laws of chemical combination by weight and by volume. Atomic theory. Symbols and their use. Equivalents. Atomic weights. Molecular weights. Avogadro's hypothesis and relation of gas density to molecular weight. Chemical equations and calculations; nomenclature.

A general knowledge of the properties of the elements and of the chief types of their compounds with a view to their classification.

The ordinary methods of preparation, and the chief properties of the following elements and their principal compounds:—hydrogen, oxygen, the halogens, sulphur, nitrogen, phosphorus, arsenic, boron, carbon and silicon.

Chief sources, preparation and properties of the common metals, viz., sodium, potassium (ammonium), silver, mercury, lead, copper, zinc, antimony, bismuth, magnesium, calcium, barium, aluminium, iron, manganese, chromium, tin, and the preparation and properties of their oxides, hydroxides and their salts with the more common negative radicals.

TEXT-BOOKS.

1938 & 1939.

Books for Study—

Smith: Experimental Inorganic Chemistry (Bell).

Senter: Text book of Inorganic Chemistry.

An Intermediate Course of Practical Chemistry by K. R. Krishna Ayyar, M.A., and A. Narayanan Poti, M.A., 1935 (A. Ramaswami, Trivandrum).

Reference—

Smith: Introduction to Inorganic Chemistry (Bell).

Holmyard, E. J.: Inorganic Chemistry (Edward Arnold).

Partington, J. R.: Everyday Chemistry (Macmillan).

Introduction to Chemistry (Inorganic) by H. K. Sen, M.A., D.Sc., (The Book Company, Ltd., Calcutta).

(4) NATURAL SCIENCE.

(i) *Botany.*

- (1) The main external features, mode of life and place in nature of the following:—Bacteria, Fungi, Algae, Lichens, Mosses, Ferns and Flowering plants.
- (2) The external morphology of the root, stem, leaf, inflorescence, flower, fruit and seed, and the meaning of 'homology' with regard to modifications of these.
- (3) The work of the root, stem, leaf and flower, including the main facts concerning the absorption of food and water, transpiration, respiration, metabolism, the storage of food reserves, growth, reaction to light and gravity, pollination, fertilization and the germination of seeds. Candidates will be expected to show that they have studied these experimentally in living plants either personally or in class demonstration.
- (4) The nature, occurrence and function of the epidermis, root-hairs, stomata, parenchyma, vascular bundles, sieve-tubes, fibres, vessels and cambium, so far as these are required for a proper understanding of the physiology portions in paragraph 3.
- (5) The principal characteristics of the following Natural Orders and Tribes as exemplified in South India:—

Anonaceae, Malvaceae, Rhamnaceae, Papilionaceae, Cæsalpiniaceae, Mimosaceae, Myrtaceae, Rubiaceae, Compositae, Convolvulaceae, Acanthaceae, Labiatae, Euphorbiaceae, Palmae and Musaceae.

Candidates will not be examined in the use of the microscope, but it is expected that teachers will use the microscope freely for purposes of demonstration.

Books for Reference—

- Thoday: Botany for Senior Students.
 P. F. Fyson: Botany for India.
 K. Rangachari: Manual of Elementary Botany for India.
 K. Rangachari: A Handbook of Botany for India.
 Dixon: Practical Plant Biology.
 A. G. Tansley: Elementary Biology.
 Gager: Fundamentals of Botany.

(ii) Zoology.

Zoology and Physiology---

The chief characters of living organisms. Protoplasm. Cell. Plants and Animals, how they agree and how they differ. Meaning of the terms Biology, Morphology and Physiology. The theory of Evolution treated in an elementary manner. The structure of the following animals treated in a very elementary manner with special reference to their physiology—Amœba, Paramecium, Obelia, Earthworm. Outline of their reproduction. A more detailed study of the external characters, and of the general arrangement and relations of the chief internal organs, as revealed by dissection, in the cockroach, the frog and the rabbit. General outline of their life history. External features of a fish e.g., shark (*Carcharias*). Life history of a butterfly. All the types mentioned above are to be studied with special reference to their environment.

The Human skeleton and its parts. The arrangement of the chief viscera in man. The leading facts of human physiology treated in a very elementary way. The nature of food and the manner in which it is digested and absorbed. Glands. The work of the liver. The nature and functions of the blood. The heart and the circulation. Respiration. Waste products and their removal. The temperature of the body and how it is maintained. The action of muscles. The chief functions of the central nervous system, nerves and sensory organs.

Candidates will be expected to be able to make simple diagrams to show the arrangement or general features of the chief organs and structures in the animals enumerated in the syllabus. A practical knowledge of minute structure requiring the use of the microscope will not be required.

Books for Study—

G. C. Bourne: *Comparative Anatomy of Animals*, 2 Vols. (G. Bell & Sons).

Huxley (revised by Barcroft): *Lessons in Elementary Physiology*. (Macmillan).

Bainbridge and Menzies: *Essentials of Physiology* (Longmans, Green & Co.).

Parker and Bhatia: *An Elementary Text-book of Zoology for Indian Students*. (Macmillan).

Introduction to Zoology—Hegner. (Macmillan & Co., New York.)

Zoology for Medical Students by Borradaile. (Oxford University Press).

Elementary Physiology by Foster and Shore. (Macmillan).

Essentials of Zoology: A. Meek (Longmans.)

Reference.—

1. The Text-book in Zoology by H. G. Walls and A. M. Davies.
2. A. Meek and G. R. Kohl: Essentials of Zoology (Longmans).
3. W. Furneaux and W. A. M. Smart: Human Physiology (Longmans).

(5) GEOGRAPHY.**I. The Physical Basis of Geography.**—

- (a) *The Atmosphere.*—Movements of air and water and the resulting types of weather and climate—insolation—distribution of land and water—horizontal and vertical distribution of temperature—atmospheric pressure and world winds—conditions of humidity and precipitation—storms. Local winds: their causes and effects on climate.
- (b) *The Oceans.*—Area and depth—continental shelf and slopes—deeps—distribution of salinity and temperature—movement of the ocean waves and tides—currents and their effects on climate—deposits—coral formations.
- (c) *The Land.*—Materials of the earth's crust—earth sculpture—agencies of disintegration and reconstruction—work of moving water—development of river systems—underground water—snow and ice—work of wind as an agent of erosion, transport and deposition. Earth movements: volcanoes—lakes—shorelines—deltas and estuaries—factors affecting soil formation and distribution of soil types.

(These topics to be dealt with in some detail so as to give a real grounding for the later study of Regional Geography). (a) and (c) to be given about $\frac{2}{3}$ of the time apportioned for the study of 1 and $\frac{1}{2}$ to (b) the Oceans.

II. General Regional Geography on a World basis.—Structure—climate—vegetation—distribution of plant and animal life—study of major natural regions—Essentials of Economic Geography—Distribution of population—localisation of industry—transport and trade.

III. Detailed Study of India.—(World relations to be stressed) Regional Studies with reference to the following:—Structural features, relief and rivers, soils—climate—place in world climatic types, study of the monsoons,

comparison with other monsoon areas—the effect of physical features on distribution of natural resources and on economic development—major products and industries—land and sea trade—Empire and world relations—communications—distribution of population—Geographic factors affecting status in world economy.

Practical Work—

(a) Shape of the Earth—determination of position—latitude and longitude—Greenwich time and Indian Standard Time.

(b) *Practical Map Work.*—Methods of map-making:
(i) Elementary Principles of Field-Mapping—chain—plane-table—prismatic compass—clinometer—levelling staff—Aneroid barometer. (ii) Simple types of map projections with graphic methods only:—

zenithal polar,

simple conical with one and two standard parallels,

Polyconic,

Bonne,

cylindrical; equal area, mercator, equi-distant,

Sinusoidal,

Mollweide,

one in a million map.

(c) Methods of showing relief and other physical features—problems of scale and symbol. Detailed study and interpretation of Survey of India maps with special reference to one-inch map.

(d) Collection and tabulation of geographic data: diagrammatic and cartographic methods of expression.

The following text-books are recommended to indicate the standard of work required:—

1938 and 1939.

Intermediate Geography—Dudley Stamp, (Longmans, Green & Co.).

Regional Geography, Book IV—The World—L. Brooks (University of London Press).

The Indian Empire—Dudley Stamp (Longmans & Co.)

Text-book of Geography—A. W. Andrews (Edward Arnold & Co.)

Economic Geography of the British Empire—C. B. Thurston (University of London Press.)

A Geography of Asia—J. Martin (Macmillan & Co.)

Europe by Macmunn and Coster (Oxford Clarendon Press).

Physiographical Introduction—A. J. Herbertson (Oxford University Press.)

Physical Geography—P. Lake (Cambridge University Press—can be obtained from Messrs. Macmillan & Co.).

Maps and Survey—A. R. Hinks (Cambridge University Press.)

A little book of map projection—W. Garnett (George Philip & Son).

Oxford Advanced Atlas (Oxford University Press).

For reference—

Lyde's Continent of Asia (Macmillan & Co.).

(6) LOGIC.

1938, 1939, 1940 and 1941.

An Introductory Logic by Creighton and Smart, omitting Chapter II and the whole of Part III.

Books recommended for consultation by the Teachers:—

Mellone's "*Modern Logic*".

Wolf's "*Scientific Method*".

(7) ANCIENT HISTORY.

The following books are recommended as indicating the scope in Greek and Roman History—

I. (1) Bury's History of Greece.

(2) History of Greece, Tutorial series.

II. (1) History of Rome—Tutorial Series.

(2) Shuckburgh's History of Rome.

(3) Pelham's History of Rome.

(4) Myer's History of Rome (Methuen).

N.B.—In regard to the two works, Bury's History of Greece and Shuckburgh's History of Rome, the bigger books are intended.

(8) MODERN HISTORY.

General Outlines of Political, Constitutional and Industrial History, the scope being indicated by Rait's British History, (Bound in one Volume, Nelson & Sons), and Ramsay Muir's History of England, (Longmans, Green & Co.).

Reference—

Trevelyan's History of England.

Rayner: A Concise History of Britain (published by Messrs. Longmans, Green & Co.).

Note:—The first paper shall deal with the History of Great Britain and Ireland, political, economic and constitutional down to 1603 and the second paper shall deal with the period after 1603 down to the present day.

(9) INDIAN HISTORY.

General Outlines of Indian History, the scope being indicated by Messrs. Longmans' Series of three books:—(1) Hindu India by Mr. K. V. Rangaswami Ayyangar, (2) Muhammadan India by Messrs. H. L. O. Garret and Sitaram Kohli, and (3) British India by Mr. Rushbrook Williams.

Note:—The first paper shall deal with Ancient and Mediæval Indian History down to 1526 A.D., and the second paper shall deal with Indian History from 1526 A.D., to the present day.

(10) AGRICULTURE.

Theoretical.—(2 hours a week for 2 years, each year consisting of 32 working weeks—total 128 hours).

Weather.—Climate, seasons, monsoons and rainfall, as affecting the growth of crops.

Soils.—Origin. Formation. Soils of the Madras Presidency.

The proximate constituents, sand, clay, lime and humus. Fertility of the soil as modified by its physical, chemical and biological properties. Water capacity and movement of water in soils. Drainage. Dormant and available plantfood. Retentive power of soils for manurial constituents.

Land Measurement.—Measurement of land. Laying out of plots. Calculation of areas.

Tillage and Tillage Implements.—Necessity for and effects of tith, tillage. Tith, tillage operations in wet and dry lands. Ploughs and ploughing. Wooden and iron ploughs. The parts of a plough and general adjustments. Harrows. Guntakas. Cultivators. Rollers. Tools employed in tillage operations.

Seeds and Sowing—Preparation of land for sowing. Deep and shallow sowing. Broad-casting and drilling implements used. Preparation of seed for sowing. Quantity and quality of seed. Selection of seed and seed strains. Germination of seed. Seed beds. Nurseries. Transplanting.

Plant Life—Plant nutrition as illustrated by the growth of farm crops. Functions of roots, stems, leaves, flowers and seeds. Reproduction from seeds and by vegetative growth. Weeds and their distribution in land. Eradication of weeds. Interculturing. Implements and tools used.

Irrigation—Necessity for water. Sources of water supply. Laying out irrigation channels in the field. Water-lifts.

Manures and Manuring—Necessity for manures. General principles governing the application of manures. Classification of manures. Farm manure, its collection and preservation. Synthetic Farm Yard Manure. Green manuring, oil-cakes, bone-meal, fish, manure. Concentrated and special manures available in South India. Unit values of manures.

Harvesting—harvesting, threshing, cleaning and measuring or weighing of produce. Storage of produce. Marketing.

Crops and Cropping—Rotations and mixed cropping. The chief Cereal, Pulse, Industrial, Fodder and Garden crops of the Presidency, for instance, the following:—Paddy, cholam, ragi, cumbu, dholl, Bengal gram, sugarcane, cotton, groundnut, castor, gingelly, plantain, tobacco, chillies, gogu, indigo, fodder-cholam, sunhemp, sweet-potatoes, brinjals and gourds. Other crops peculiar to the locality.

(A practical working knowledge of the crops is required, deduced, as far as possible, from the students having taken part in all field operations including the preparation of the land, sowing and planting, manuring, irrigating, weeding, harvesting, threshing, and preparation for the market).

Damage caused to crops by insect pests and fungoid diseases. Control measures.

Farm Animals and Feeding.—Care and management of cattle. Breeds of cattle. Breeding. Points of a good animal. Common ailments and First-aid treatment. Cattle-foods—roughages and concentrates. Rations for growing animals, working cattle and milch cows. Milk and its general properties.

(*Practical*:—3 hours in the morning, once a week, for 2 years, each year consisting of 32 working weeks—total 64 classes).

Each student should take part in all operations going on on the farm—not merely seeing the work done by coolies—maintain a field book of observations, corrected and testified by the class teacher and the Principal as student's own work. Field

books should be produced at the time of the Practical Examination. Not less than 75 per cent. of practical classes should have been attended by each student.

Examination—The examination will be both written and practical. The paper to be of 2 hours' duration and will carry 50 marks.

The practical to be of 3 hours' duration, to consist of ploughing and other field operations as well as an oral examination and to carry 50 marks.

The minimum for a pass will be the same as for other optional subjects, i.e., 35 per cent.

(11) ELECTRICAL ENGINEERING.

AN ELEMENTARY COURSE IN MECHANICAL ENGINEERING.

Graphics: Problems relating to the reduction of a system of forces in two dimensions. Graphical arithmetic. Plotting of curves from given data.

Machine Drawing: Ability to copy accurately to scale and supply additional views. The preparation of drawings of simple machines from dimensioned sketches, models or actual parts of machines.

Preliminary geometrical drawing recommended:—Projections of simple solids like prisms, pyramids, cones, cylinders in simple position on the 3 co-ordinate planes. Elementary changing of planes of projection. Simple sections.

Strength of materials: Mechanical properties of engineering materials. Stress and strain. Modulus of elasticity. Elastic limit. Ultimate strength. Factor of safety and working strength. Statics and application to simple structures. Coplanar forces. Application of graphical methods to simple frames with pin joints such as cranes, etc.* Elementary study of beams. Strength and stiffness. Bending moment and shearing force. Sections in iron, steel and wood. Simple shear and torsion. Horse power transmitted by solid circular shafts by assumption of formula. Principle of work. Potential and kinetic energy. Horse power. Centrifugal force and its application to governors.

Materials: Characteristics of cast iron, wrought iron and steel. Working strength of these materials in compression, tension and shear. Characteristics of copper, brass, gun-metal and aluminium.

Shafting and bearings: simple forms of shafts and shaft couplings. The pin type flexible coupling. Simple types of bearings. Pedestal, ring oiled, and ball bearings. Use of belt pulleys and their velocity ratio. Use of spur and bevel wheels. Clutches and universal joints.

PRACTICAL WORK.

The following indicates broadly the scope of the practical work.

Exercises in wood-work, forging, soldering, casting, fitting, wood and metal turning.

ELECTRICAL ENGINEERING.

General principles: Electro-magnetic and C. G. S. systems of units. Principles of electro-magnetic induction. Practical system of electrical units. Electro-magnets. Production of alternating currents. Commutation. Alternating e. m. f. and current R. M. S. values; Frequency, Power and Power Factor. Simple notions of Inductance, Impedance and Polyphase currents.

Measurements: The Principles of construction and use of instruments ordinarily employed.

Generators: Continuous current generator (Shunt, Series and Compound); Alternators—single and three phase; Transformers single phase; their construction, principles of action and characteristics.

Motors: Continuous current motors (shunt, series and compound) their construction, principles of action, performance and uses. Simple notions about synchronous and induction motors.

Batteries: Construction and management of Primary and Secondary batteries and their practical applications.

Distribution: Methods of distributing electric power in streets, overhead and underground mains. Calculation of conductor sizes.

Illumination: Candle power; Use of shades; Photometer.

Note.—The instruction given will in general be descriptive only. In alternating current the treatment will be by the use of graphs avoiding mathematical equations.

LABORATORY COURSE.

The following indicates broadly the scope of the practical work.

1. Simple exercises in soldering, joining and wiring.

Direct Current—

2. Experimental verification of Joule's Law.
3. Measurement of efficiency of an electric kettle.
4. Blow out current of fuses in open air and fuse holders, influence of fuse holders and increase in number of strands.

5. Practical methods of measurement of resistance.
 - (a) Drop of potential method.
 - (b) Comparison of voltage drop with drop against a known standard resistance.
 - (c) Wheatstone bridge method.
 - (d) By ohmmeter.
 - (e) Insulation resistance by megger.
6. Calibration of measuring instruments—
 - (a) Calibration of ammeter with a sub-standard instrument.
 - (b) Calibration of voltmeter against a standard cell by use of potentiometer and ratio box and against a sub-standard voltmeter.
 - (c) Calibration of voltmeter as ohmmeter.
 - (d) Calibration of a Wattmeter against sub-standard voltmeters and ammeters.
 - (e) Calibration of ampere hour and watt hour meters.
7. Tracing a switchboard circuit with and without faults.
8. Measurement of power taken by lamps, fans, electric kettles, irons, stoves, etc.
9. Shunt Motor—
 - (a) Standard connections for starting up a self excited D. C. shunt wound motor with standard type starter and field rheostat.
 - (b) Reversal of a shunt wound motor.
 - (c) Starting shunt wound motors with separate excitation. Use of field discharge switch.
 - (d) Speed characteristic of shunt motor.
 - (e) Efficiency of shunt motor by brake test.
10. Compound wound motors (cumulative)—Speed characteristics.
11. Generators—
 - (a) Open circuit characteristics of a shunt wound generator separately excited.
 - (b) Load characteristic of shunt type generator separately excited and self excited.
12. Motor generators—Overall efficiency of a D. C.—D. C. motor generator set.
13. Measurement of internal resistance of a primary and a secondary cell.

Alternating Current—

14. Measurement of inductance from applied A. C. voltage, current flowing and from frequency.
15. Measurement of impedance from voltage, current and frequency. Resistance and reactance components by right angled triangle construction.
16. Alternators.
 - (a) Open circuit characteristic of a three phase alternator.
 - (b) Load characteristic of a 3 phase alternator with balanced load.
17. Transformers—Single phase transformers—
 - (a) Ratio of transformation.
 - (b) Load characteristic of a transformer with non-inductive load.
 - (c) Efficiency by actual loading by measuring input and output by Wattmeters.
18. Measurement of power.
 - (a) By Wattmeter in a single phase circuit.
 - (b) In a 3 phase balanced load circuit by measuring power in one phase by a single Wattmeter and multiplying by 3. Power output of a 3 phase star connected generator on balanced load.
- 19 Measurement of power factor.
 - (a) Single phase circuit.
 - (b) Alternator 3 phase star connected balanced load circuit by assumption of formula.

$$\cos = \frac{\text{Watts}}{\text{Line volts} \times \text{line amps} \times \sqrt{3}}$$

20. Induction motor. Squirrel cage type. 3 phase.
 - (a) Speed variation on load.
 - (b) Efficiency from brake test.
21. Calibration of an A.C. single phase watt hour meter with a standard Wattmeter and standard clocks.
22. Photometry—Measurement of candle power of an incandescent lamp against any standard.

Note.—At least 2 hours a week should be devoted to practical work.

(12) MECHANICAL ENGINEERING.

Graphics: Problems relating to the reduction of a system of forces in two dimensions. Plotting of curves from given data. Graphical arithmetic.

Machine drawing: Ability to copy accurately to scale and supply additional views. The preparation of drawings of simple machines and parts from dimensioned sketches, models or actual parts of machinery.

Geometrical Drawing: Projection of simple solids like prisms, pyramids, cones, and cylinders in simple positions on to the 3 co-ordinate planes. Elementary changing of the planes of projection. Simple sections.

Strength of materials: Mechanical properties of engineering materials. Stress and strain. Modulus of elasticity. Elastic limit. Ultimate strength, factor of safety and working strength. Statics and application to simple structures. Coplanar forces. Application of graphical method to simple frames with pin joints. Elementary study of beams. Strength and stiffness, bending moments and shearing force. Sections in iron, steel and wood. Simple shear and torsion. H. P. transmitted by solid circular shafts by assumption of formula. Principle of work. Potential and kinetic energy. Horse Power. Centrifugal force and application to governors.

Heat Engines: Heat and work. Properties of steam. Sensible heat. Latent heat and total heat. Dry, saturated and superheated steam. Boiling point of liquids. Relation between temperature and pressure of steam. Laws of perfect gases. Estimation of mean pressure and work done from indicator diagrams. Brake horse power. Mechanical efficiency of engines.

Steam engines: Stationary steam engines, condensing and non-condensing, the locomotive engine; the de Laval turbine; description and working. Mechanical efficiency.

Internal combustion engines: Modern engine cycles and their applications. A simple type of 4 stroke oil engine and a two stroke oil engine.

Boiler: Description and working of common types and their accessories.

Materials: Characteristics of cast iron, wrought iron and steel. Working strength of these materials in compression, tension and shear. Characteristics of copper, brass, gun-metal and aluminium.

Connections: Forms and proportions of rivets and their arrangements in lap and butt joints—single and double riveted joints. Pitch of rivets. Forms and proportions of bolts, nuts and keys.

Shaftings and bearings: Simple forms of shaft couplings and shaft bearings. Clutches; claw and simple cone friction types. Arrangement of pedestal and footstep bearings. Simple types of ball bearings. Methods of lubricating bearings.

Belt and toothed gearing: Forms of belt pulleys; Velocity ratio. Fast and loose pulleys. Stepped speed cones. Tension of belts. Joints of belts. Materials of belting. Spur and bevel wheels and their velocity ratio.

Engine details: Usual forms of cranks and levers, eccentrics, connecting rods, cross heads and coupling rods.

Pumps: Working of simple types.

Note:—Instruction will in general be descriptive only.

PRACTICAL WORK.

The following indicates broadly the scope of the practical work.

1. Simple lessons in woodwork, forging, soldering, casting, fitting, wood and metal turning.
2. Verification of Hooke's Law for tension. Determination of Elastic limit and Young's Modulus.
3. Verification of laws of strength and stiffness of beams.
4. Determination of the mechanical equivalent of heat.
5. Determination of latent heat.
6. Determination of the relation between temperature and pressure of steam.
7. Determination of I. H. P. from diagram supplied.
8. Brake Horse Power of an engine.

Note.—At least two hours a week to be given to practical work.

(13) SURVEYING.

Chain, Prismatic Compass and Plane Table.—Running a chain line; measuring offsets; use of the cross staff; optical square; survey of areas with chain only; well conditioned triangles, check or tie lines; keeping the field book; testing the chain; modes of passing obstacles; chaining across a river or other obstacle; survey of areas with prismatic compass; keeping the field book; plotting surveys made with chain and compass; survey of areas with plane tables; inaccessible points; filling in a survey; finding one's place in a survey.

Setting out.—Ranging straight lines by eye. Laying out curves by chords and offsets.

Level.—Permanent and temporary adjustments; levelling field book, two methods of reducing the field book; levelling; contouring; cross section; correction for curvature of the earth and refraction; check levels; bench marks; use of Abney's level; clinometer and ghaat tracer; setting out gradient for railways, canals and sewers.

Theodolite.—Use and adjustments of Theodolites; traversing; Gales' system; setting out straight lines and curves.

Drawing and Mensuration.—Use of drawing instruments, construction of scales; conventional signs; estimation of areas; use of Planimeter and Pantagraph; plotting lines of levels and taking out quantities of earth-work; copying plans to different scales by squares; representation of ground by contours; section on contoured plans; location of roads and railways on contoured plans showing cuttings and embankments; estimation of areas and volumes; reduction and plotting of a theodolite traverse.

Surveying.—Four hours per week for two years will be adequate for covering the syllabus. One hour each week may be devoted to lecturing and 3 hours for outdoor practice. For every 12 students, one set of instruments may be provided.

Text-books—To indicate the scope and standard, the following text-books are suggested for the present:—

Electrical Engineering—Mechanical Engineering.

Applied Mechanics—Cryer and Jordan.

Machine Design—Frank Castle.

Mechanics for Engineers—Morley (advanced portions to be omitted.)

Steam (Elementary)—Ripper.

Steam Engines—Holmes.

Electrical Engineering—Principles of Direct Current Electrical Engineering—Barr.

Electrical Engineering—Gray.

Surveying.

Methods of Surveying by N. F. Mackenzie.

(14) ARCHITECTURE.

1. General Survey and History of Architecture:—

Egyptian, Greek, Roman, Byzantine, Gothic, Indian,
Eastern, Modern.

2. Materials of Construction, and limitations imposed by them—Wood, stone, brick, concrete, terra cotta, steel, mortars.
3. Styles of Architecture :—Main points of difference and evolution.
4. Indian styles and their chief characteristics—Cave Architecture, Jain, Buddhist, Dravidian, Pallava, Chalukyan, Vijayanagai, Saracenic, combinations of styles.
5. General principles of designs :—Temple architecture, Architecture of Public Buildings. Indian Domestic Architecture—Huts, Contiguous houses with court-yard, bungalow or garden houses, palaces. Influence of climate, rainfall, geographical position, etc.
6. Details and Ornamentation—Orders, Pillars, Bases and Capitals, Doors and Windows, Friezes, Mouldings, Ceilings, Roofs, Facades, Floors.
7. Drawing—Geometrical Drawing, Figure Drawings, perspective, making sketches from objects, shading.

Note.—There shall be two papers of two hours duration each.

DRAWING.

Time available: 4 hours per week for 2 years (20 months).

The course shall consist of two branches—

- A. Practical Drawing and Painting.
- B. History, Theory and Appreciation of Art.

A. i. Still Life.

- ii. Objects in relief for appreciation of light and shade.
- iii. The Human figure in repose.
- iv. The Human figure in action.

The examination will be of 5 hours—i. Still life in colour ;
 ii. Object in relief etc., monochrome; The human figure in
 iii. repose and iv. action, both in monochrome.

B. i. The laws of perspective.

- ii. History of (a) Indian and (b) European art.
- iii. Theory and appreciation of Art, with special reference to

(a) Ajanta Frescoes, Mogul Art and Modern Indian Art.

(b) Italian, Dutch and Modern European Schools up to the end of the XIX century.

This course requires the study of a large number of reproductions (in colour) of pictures.

Note.—There shall be two examinations, one a written examination of 2 hours, and the other a practical examination.

(15) INDIAN MUSIC.

Theory of Music.

(1) *Stayi*—Swaras 7 and 12 and their names. Consonant and Dissonant Notes—Vadi, Vivadi and Samvadi.

(2) *Raga and Tala.*—

Definition of Raga.

Raga classifications in Carnatic Music.

Definition of Tala.

The Tala system of Carnatic Music. The Scheme of 35 Talas.

(3) *Musical Composition.*—The characteristics of different types of musical compositions, viz., Gitas, Varnas, Ragamalikas, Kirtanams, Pādams, Chindus.

Principles of Carnatic Notation (Sa, ri, ga, ma, etc.).

(4) *History of South Indian Music.*—Biographies of the following South Indian Musicians and Composers and their contribution to Carnatic Music.—

Venkatamakhi, Kshetrajnulu, Muthuswami Dikshitar, Tyagaraja, Syama Sastri, Pattanam Subrahmanya Ayyar, Arunachala Kavirayar, Gopalakrishna Bharati and Ramnad Srinivasa Ayyangar.

(5) A knowledge of the following 20 ragas and of at least one musical composition in each:—

Todi, Bairavi, Sankarabharanam, Kalyani, Kambhoji, Saveri, Mohanam, Mukhari, Kedaragaulam, Arabhi, Sriragam, Bilahari, Yadukulakambhoji, Ananda-bhairavi, Nadanamakriya, Kharaharapriya, Begada, Sahana, Kamavardhani and Dhanyasi.

There shall be one theory paper of three hours' duration and a practical examination. 50 marks shall be the maximum for the theory paper and 50 marks for the practical examination.

There shall be a practical examination in either vocal or instrumental music and a separate minimum of 35 per cent. will be required in the practical examination. As regards instrumental music, candidates will have the choice of playing on any of the following instruments: Veena, Violin and Flute.

In the practical examination, candidates will be expected to sing or play any of the 20 ragas prescribed as well as compositions in any of the following Talas: Adī, Rupaka, Triputa and

Chapu. Candidates shall also be expected to sing or play 5 gitas, 3 varnams and 1 padam.

The candidates will also be expected to elaborate (i.e., alapanam) any of the first ten ragas prescribed above.

Books for Reference—

1. Sangita Sampradaya Pradarsini, by Subbarama Dikshitar—Two Volumes and the Primer.

2. Oriental Music in European Notation—by A. M. Chinna-swami Mudaliyar.

3. Music of India by Rev. H. A. Popley.

4. Music of Hindusthan by A. H. Fox—Strangways.

5. Richardson—"Sound."

6. T. S. Krishnaswami—"Sound."

7. Modern Violin Technique by Thistleton.

8. "Thiagaraja" by M. S. Ramaswami Ayyar.

9. Singaracharlu's Musical Publications in seven parts.

10. "Thyagaraja Hrudayam"—3 Volumes—by K. V. Srinivasa Ayyangar.

11. Bharata Sangita Swayambhodini by T. C. R. Johannes.

12. "Sound" by Nightingale (Bell & Sons).

13. The Melakarta Janyaraga Scheme—by P. Sambamurti, (The Indian Music Publishing House, G. T., Madras).

14. Swaramanjari.

15. Gayaka Parijatam.

16. Sangita Kalanidhi.

17. Gayaka Siddhanjanam, Parts I & II.

} By T. Singara-
charlu.

18. Sangita Chintamani by K. V. Srinivasa Ayyangar.

19. Sangita Sudhambudhi by K. V. Srinivasa Ayyangar.

20. Svaramelakalanidhi—edited by M. S. Ramaswami Ayyar, (Annamalai University Publication).

21. Harmonia Bodhana Sangitha Rathnam—edited by Subrahmanya Ayyar, (Kamakshi Vilas Book Depot, Vepery, Madras).

22. Varna Malika by K. Ramachandran—(Messrs. V. Venkateswarlu Sastrulu & Co., Esplanade, Madras).

23. Kirtana Sagaram, Book I, by Mr. P. Sambamurti. (The Indian Music Publishing House, G. T., Madras).

24. Chaturdandiprakasika published by the Music Academy, Madras.

25. Ganabhaskara by K. V. Srinivasa Ayyangar.

26. Syamasastri and other Composers by P. Sambamurti.

27. Guruguha Ganamrta Varshini by Vedanta Bhagavatar.

28. Kirtana Sagaram, Part II, by P. Sambamurti.

(16) WESTERN MUSIC.

I. Theory.

1. *Notation*.—The Staff and clefs; Leger Lines; Accidentals; Formation of the Major and Minor Scales (both forms of the latter) and Chromatic Scales; Key-signatures and Time-signatures.
2. *Time*.—Relative duration of sounds; Notes; Rests; Dots; Ties, Staccato-marks; the Pause; Regular and Irregular Grouping of notes; Syncopation; Adding Time-Signature and Bar-lines to a given Melody; Completing a Bar by the addition of Rests or Notes.
3. *Transposition and Terms*.—Transposition of a simple example from Clef to Clef. (G. C. and F), from Key to Key and from Short to Open Score, or *vice versa*. Knowledge of necessary Terms for the writing of Chords, and for Part-writing. Naming the key of a given passage and supplying the Key-signature.
4. *Intervals*.—Diatonic and Chromatic, simple and compound, direct and inverted. Figuring the Bass of a simple example of Harmony up to and including Chords of the 7th and their Inversions.
5. *Harmony*.—Simple exercises on Triads and their Inversions, the Dominant 7th and its Inversions and Resolutions. The construction and designation of Cadences, all to be illustrated by easy exercises and four-part writing.
6. *Melodic Analysis*.—The Analysis of a simple eight-bar Melodic sentence into "fore" and "after" phrases and sections.
7. Terms and signs in general use, Ornaments and Embellishments.

Text-Books.—

1. Rudiments of Music—Stewart Macpherson—(Associated Board Publication).
2. Rudiments of Music—W. H. Cummings. (Novello's Music Primers).
3. Text-book of Musical Knowledge (Upper Division).—(C. W. Pearce, Trinity Coll: Publication).
4. Harmony—J. Stainer (Novello's Music Primers).
5. Biography—Dr. Riemañ Musical History.

II. Viva Voce and Ear Tests.

1. Rhythm and Time. To hum or tap a rhythmical passage played on the Pianoforte by the Examiner and to state the Time.

- 2 To recognise Major and Minor common chords and their Inversions played in four-part Harmony.
3. To recognise Cadences.
4. To name five notes of a Diatonic Major scale played in any order.
5. To name five notes of a Diatonic Minor scale played in any order.
6. To answer questions on—
 - (i) Scales, Major and Minor (both forms).
 - (ii) Intervals.
 - (iii) Accent.
 - (iv) On Marks of Expression.

III. Practical Examination.

1. Scales—Major and Minor (Melodic and Harmonic) in all Keys—compass two octaves.
2. Arpeggios—formed of all the Major and Minor common chords in all Keys—compass two octaves.
3. Two Studies (to be prescribed from year to year).
4. Two Pieces (to be prescribed from year to year).

Books: Music Publications of Local Examinations in Music of—

- i. The Trinity College, London.
- ii. The Associated Board of the Royal Academy of Music and the Royal College of Music, London.

Two hours each week may be devoted to Theory, and two hours for Practice.

There shall be one theory paper of three hours' duration and a practical examination and *viva voce* and Ear Tests.

(17) COMMERCE.

Elements of Commerce.

Commerce: Evolution of modern commerce. The Economic basis of Commerce. Industry: Evolution of modern industry; Commerce in relation to indust. *f.*

Industrial and Business Organisation: Types of businesses: Individualistic concerns, Partnerships, Joint Stock Companies—Public and Private, Trusts and monopolies, Co-operative undertakings, Government and Municipal undertakings.

Organisation of Capital. Organisation of Labour. Organisation of credit. Banking. Organisation of trade. Agency business. Managing Agents. Marketing and Salesmanship. Produce exchanges. Advertising.

Land, water and air transport. Shipping and railway formalities. Insurance (Fire and Marine). Ware-housing. Documents used in the above.

Office organisation: accounting. Correspondence. Filing, indexing. Statistical records of business results.

Chamber of commerce and other institutions for the promotion of trade. Trade barriers, Customs and customs formalities.

Methods of payment. Balance of trade and its liquidation. Foreign exchange. Currencies of leading commercial countries and their conversion.

Book recommended—

Stephenson: Principles and Practice of Commerce.

Accountancy.

1. Book-keeping: its principles and practice by means of double entry. The uses of subsidiary books. Accounts of trading and non-trading concerns. Preparation of annual accounts, manufacturing, trading and profit and loss accounts and balance-sheet; real, personal and nominal accounts. Goodwill. Depreciation. Reserves. Reserve fund. Sinking funds.

2. Capital and revenue accounts. Receipts and payments accounts. Income and expenditure accounts.

3. Departmental and Branch accounts including Foreign Branches. Consignment and Joint adventures.

4. Partnership accounts including dissolution of partnerships and questions of good-will. Adjustment of accounts as between partners.

5. Joint Stock companies accounts. Statutory books and returns. Share capital and share records. Issue of shares. Allotments and calls. Debentures. Premium and discount on shares and debentures. Reduction of capital and reconstruction. Purchase of business. Reconstruction, amalgamation and absorption.

6. Systems of accounting as applied to commercial enterprises; public undertakings; charities; hospitals, etc.

7. Single entry; its conversion into Double-Entry.

Book recommended—

Arthur Fieldhouse: *Complete Commercial Book-keeping.*

(18) ECONOMIC GEOGRAPHY AND ECONOMIC HISTORY.

(a) *Economic Geography.*

1. General World Geography.

Physical basis of Geography. Structure and soil relief and drainage—climate and rainfall—natural vegetation—major natural regions of the world—population, its distribution and density.

2. Chief world commodities—their distribution and conditions of production, relative supply and markets. Food stuffs of animal and vegetable origin—mineral products—raw materials of industry.

3. Chief world industries and their regional distribution, special attention being paid to textile, iron and steel, ship-building and chemical industries—sources of mechanical power.

4. Transport—inland and oceanic—relation to hinterlands and market—world ports and trade routes—immigration and colonisation.

Text-books—

1. Dudley Stamp—*Intermediate Commercial Geography*, (Longmans).

2. Macfarlane—*Economic Geography.*

(b) *Economic History.*

A general survey of industrial and commercial developments in Great Britain.

1. The natural and human foundations of Britain's economic pre-eminence—The manorial system and mediaeval agricultural conditions—Guilds and handicrafts—Mediaeval trade—Breakdown of mediaeval economy—Enclosures and social changes—Rise of national unity, the mercantile system—English industries in 1700—The influence of foreign immigrants.—The East India Company and its economic influence on England.

2. The Industrial Revolution and its social and economic effects—Rise of cotton and iron industries—Agricultural Reform and agrarian changes—New transport methods—Steamship and Railway. Commercial Revolution. Poor relief, factory reform and public health legislation—Tariff policy—Growth of Banking. Labour movement. Commercial Revolution. Decay of English agriculture and efforts at its resuscitation—Growth of State regulation—Economic effects of the World War.

Text-books—

1. Sir W. Ashley—The Economic Organisation of England.
2. M. D. Stocks—The Industrial State.

For reference only—

Lipson: The Economic History of England—Middle Ages;
and

Knowles: The Industrial and Commercial Revolutions in Great Britain during the 19th Century.



(b) TEXT-BOOKS.

INTERMEDIATE EXAMINATION IN
ARTS AND SCIENCE.

Text-books for the Examinations of 1938.

ENGLISH.

1938.

Shakespeare.—

Merchant of Venice.

Poetry.—

Wordsworth: The Leech Gatherer.

Byron: Waterloo (Childe Harold, Canto iii, 17 to 28 both inclusive).

Arnold: Sohrab and Rustum.

Prose.—

Detailed Study.—

Armour: Intermediate Essays (Blackie).

Ruskin: Sesame and Lilies. Lectures I and II.

Non-detailed Study.—

Dickens: Oliver Twist.

Robinson: Everyday Life in Ancient Greece (Clarendon Press).

Monk & Winter: Adventures above the Clouds (Blackie).

SANSKRIT.

1938.

PARTS II AND III-B.

1. Śrī Harṣa's Ratnāvallī.
2. Kālidāśa's Kumāra Sambhava, Cantos 5, 6 and 7.
3. *Bhāṣakathāsāra* by Y. Mahalinga Sastri, Volume II, Part III, pages 1 to 45. (Copies can be had of R. Subrahmanya Vadyar & Co., Booksellers and Publishers, Kalpathi, Palghat, or of Y. Mahalinga Sastri, M.A., B.L., Madura College, Madura.) The portions prescribed in Volume II, Part III, of the *Bhāṣakathāsāra* are (1) Vatsarājacarita, (2) Avimārakacarita and (3) Cāru-dattacarita.

MARATHI.

1938.

PARTS II AND III-B.

For Non-detailed Study.—

Sukha-ani Shanti by Modak, pp. 1-250.

For Detailed Study.—

Poetry.—

Megha-duta (Purvardha) by Krishna Sastri Chiplunkar.

Drona-parva as in Navanita—Moropant.

Prose.—

Batamidar by S. R. Tikekar.

Drama.—

Uttara-rama-carita by P. R. Godbole.

Grammar.—

General Principles of Grammar with Prosody—Kelkar's
Marathi Grammar—Bombay Book Depot.

*Note:—*The above books can be had at Messrs. Parachure
Puranik & Co., "Madhav Bagh", Bombay.

ORIYA.

1938.

PART II.

For Non-detailed Study.—

1. Life of Maharaja Ramachandra Bhanja Deo, published by
Sahitya Prachara Sangha, Cuttack.

2. Raghu Arakhita by Kuntala Kumari Sabat.

For Detailed Study.—

1. Pranaya Ballari by Gangadhar Mehara.

2. Padma Pakhuda by Padmacharan Patnaik.

3. Pratap Natak by R. R. Deo.

4. Prayachita by Phakir Mohan Senapati.

5. Bibidha Chinta by Chintamony Mahanty.

PART III-B.

1. Debi by Upendra Prasad Mahanty.

2. Prabandha Pravesha by Vasudeva Mahapatro.

3. Galpa Swalpa by Fakir Mohan Senapati.

*N.B.—*The above books can be had at the Trading Co.,
Cuttack, or at the Students' Stores, Berhampore (Ganjam
District).

HINDI.

1938.

PARTS II AND III-B.

For Non-detailed Study.—

Premchand: Sewasadan (Abridged)—Published by Hindi
Pusthaka Agency, Calcutta.

Maithilisaran Gupta: Yasodhana—Published by Hindi
Pusthaka Agency, Calcutta.

For Detailed Study.—

Prose.—

Gadya Maladarsha by Pandit Jiwan Shanker Yajnik, M.A.,
LL.B., Professor, Benares Hindu University. (Publishers:
Ram Prasad and Brothers, Agra).

Poetry.—

Padya Prabha by Pandit Hari Shanker Sharma.
(Publishers: Ram Prasad and Brothers, Agra).

LATIN.

1938.

PARTS II AND III-B.

Vergil: Aeneid IV.

Cicero: In Catalinam I—IV.

Livy: Bk. III.

FRENCH.

1938.

PARTS II AND III-B.

About: Le roi des montagnes. (Bell and Sons: Standard
French Texts).

French Poetry for Schools. Edited by J. Boiello
(Longmans), Nos. 21-41.

Racine: Bérénice by R. E. Pellisier (Oxford University
Press).

Alex. Dumas: Pages choisies par B.L. Templeton (Oxford
Clarendon Press).

GERMAN.

1938.

PARTS II AND III-B.

Helmholtz: Die Wechselwirkung der Naturkräfte.

A book of German Verse, Ed. by H. G. Fiedler, Nos. 221-223,
230-238. (Ox. C.P.)

Eichendorff: Aus dem Leben eines Taugenichts, Ed. by
C. Osthaus.

Korner: Zriny. Ed. by F. Holzwarth.

ARABIC.

1938.

PARTS II AND III-B.

Prose and Poetry.—

Majaniul Adab, Part I, pages 55 to 187.

Qasidatul Burdah.

Grammar.—

Thatcher's Arabic Grammar or Asas-i-Arabi.

PERSIAN.

1938.

PARTS II AND III-B.

Prose and Poetry.—

Ainai 'Ajam by Iqbal.

. Gulistan, Chapters VII and VIII.

Grammar.—

Persian Grammar by Abdul Aziz Sufi.

*Note:—*A book on Persian Translation by the same author is recommended for class exercises and translations.

URDU.

1938.

PART II.

Prose and Poetry.—

Nisab-i-Mahmud by Mohammad Husain, B.A., B.T.

Non-detailed Study.—

Prem Battisi, Part I.

Grammar etc.—

Asas-i-Urdu.

PART III-B.

Prose and Poetry.—

Nairangi-i-Khiyal, Part I.

Intikhab-i-Makhzan, Part II.

Non-detailed Study.—

Firdaus-i-Barin by Sharar.

Muntakhab Afsanay, Vol. XI.

Note:—The above books can be had from the Islamiah Book Depot, Kurnool.

HEBREW.

1938.

PARTS II AND III-B.

Isaiah XLIV to the end.

First Book of Kings.

Grammar.—

Hebrew Grammar by Davidson.

TAMIL.

1938.

PART II.

Poetry.—

(*Selections published by the University of Madras).

- | | |
|---|---------------------------|
| 1. Purananuru—48 lines. | } Portion as for
1937. |
| 2. Acharakkovai—46 lines. | |
| 3. Nitinerivilakkam—80 lines. | |
| 4. Kambaramayanam—Ayodhya-kandam,
Mandirappadalam—388 lines. | |
| 5. Sengalunirvinayakar-pillait tamil, 10 stanzas—80 lines. | |
| 6. Nalvar-nanmani-malai, first 20 stanzas—129 lines. | |
| 7. Alakar-antadi, 20 stanzas—80 lines. | |
| 8. Pamban Kumaragurudasa-svamigal-prabandham,
10 stanzas—40 lines. | |
| 9. Villiputturar Bharatam—Gurukulac-carukkam, 50 stanzas
—200 lines. | |

Prose.—

Detailed Study.—

1. Nanayam (Essays on Money) by J. S. Ponniah, M.A., American College, Madura.
2. Indiya-pattirikait-toliliyal (omitting pages 1-71) by V. N. Marutachala Gaundar. (Kovai Tamil Sangam, Vaisiyal Street, Coimbatore).

* Copies available at Messrs. E. M. Gopalakrishna Kone & Sons, 158-A, Broadway, Madras,

Non-detailed Study.—

1. Surendranath Banerjea by M. S. Sabhesan, M.A. (The Modern Publishing House, Triplicane, Madras).
2. Pandiya-mannar by N. Kanakaraja Aiyar (E. M. Gopala-krishna Kone, Madura).
3. Ponnaruppuravalalar by Tilakavadiyar. (K. Palaniyandi Pillai & Co., 16, Sembudoss Street, George Town, Madras).

PART III-B.

Poetry.—

(University Intermediate Selections).

1. Aranericcharam.
2. Kuchelopakhyanam.
3. Tayumanavar.
4. Pulavararuppadai.
5. Nacchinarkkiniyar.
6. Kambanadar.

Prose.—

1. Janavinodini, Part IV, edited by C. R. Namasivaya Mudaliyar. (Tamil Kadal Office, No. 130, Govindappa Naick Street, G. T., Madras).
2. Kalingattupparani by T. Chelvakesavaraya Mudaliyar. (T. P. Alagan, Bookseller, Perambur, Madras).

TELUGU.

1938.

PART II.

Poetry (Old).—

1. Bharatam, Sabha Parvam, Canto II, 1—153 verses.
2. Vishnumayanatakam, Canto III—195 verses, by Radha-madhava Kavi, Selections published by S. V. V. Press, Vizianagram.
3. Bhojarajeeyamu, Canto V, 1—206 verses. (Available at Vavilla & Sons, Madras).

Poetry (Modern).—

4. Choudeswarimahatmyam, Cantos I and II from Kadha-prarambham by Gummaraju Rama Kavi, Gaunipalli, Sreenivasapuram Taluk, Mysore State.
5. Saraswati Ramayanamu—Uttarakandam—by Chebrolu Saraswati Devi, Mirjapur Estate, Nuzvid.

Drama.—

6. Pratimanatakam by V. Prabhakara Sastri, Telugu Pandit, Oriental Mss. Library, Egmore.

Prose.—

7. Bharatasaramu (from page 141 to 244—103 pages in all) by N. Kuppuswamayya, B.A., Tirupati.
8. Saraswata Vyasamulu by K. Ramakrishniah, M.A., 28, Singarachari Street, Triplicane, Madras.
9. Nanadesarajyanga Tantram by Valluri Suryanarayana Rao, Kovvur, West Godavari District.

Non-detailed Prose.—

10. Rajyasri by E. Bhasyakacharyulu Garu, Telugu Pandit, Hindu High School, Triplicane, Madras.
11. Radha by Sreemati K. Kanakamma Garu, Telugu Pandit, Queen Mary's College, Madras.

Grammar.—

12. Margopadesika by V. Ch. Scetaramasastrulu Garu, Telugu Pandit, University College of Arts, Waltair.

PART III-B.

The same as for Part II with the following books omitted:—

1. Bhojarajeeyamu.
2. Saraswati Ramayanamu.
3. Bharatasaramu.
4. Radha.

KANNADA.

1938.

PARTS II AND III-B.

For Detailed Study.—

Poetry.—

1. Jaimini Bharata by Lakshnisa. Sandhis 12, 13 & 14. (Bala Sahitya Mandala, Mangalore).
2. Pampa Ramayana, Aswasa IV—Karnataka Sahitya Parishat Edition. (Karnataka Sahitya Parishat Office, Bangalore City).

Drama.—

1. Swapna Vasavadatta by M. D. Alasingaracharya, (Karnataka Book Depot, 159, Sannadhi Street, Triplicane, Madras).

2. Bhasana Ekanka Natakagalu by L. Gundappa, M.A.--
Madhyama Vyayoga. (Karnataka Sangha, Central
College, Bangalore).

Modern Poetry.—

Swamedha by Vidwan S. Krishna Bhatta. (Author, St.
Aloysius' College, Mangalore).

Modern Prose.—

Rabindranath Tagore by M. Venkatesa Ayyangar, M.A.,
(Mysore University Publication).

For Non-detailed Study.—

1. Vidhiya Vaichitrya by U. Mangesha Rao, B.A., L.T.,
(Bala Sahitya Mandala, Mangalore).
2. Halliya Rani by Nellikai Sundaramma, (Bala Sahitya
Mandala, Mangalore).

MALAYALAM.

1938.

PART II.

For Non-detailed Study.—

1. Dheeravratam by Attur Krishna Pisharoti, Sri Thilakam,
Poothole, Trichur.
2. Kancanasoudham by Vidvan K. Krishna Warriar (S. R.
Book Depot, Trivandrum).

For Detailed Study.—

Poetry.—

1. Ramayanam Irupattunалу Vrttam—first Six Vrttams
(any Press).
2. Pārvathiswayamvaram—Pāna—by Kunchan Nambiyar
(Kanhirampara Ramunni Nayar, Vaniyamkulam, (Via)
Shoranur, S. Malabar).
3. Anarkali by Nilakantanunni (Unni Brothers, Vycome).
4. Vellithōni by K. K. Rajah, (Mangalodayam Press,
Trichur).
5. "Amma" by N. Balamani Amma (Vanneri Book Depot,
Punnayurkalam, Andathode, S. Malabar).

Drama.—

1. Kiratarjuneeyam Vyayogam by Paliyath Omana Kun-
hamma, Paliyath House, Chenna Mangalam, Cochin
State.

Prose.—

1. Sāhiteeyam by K. Krishna Pillai (Vidvan), Union Christian College, Alwaye.
2. Sitavanavāsam by Ambadi Narayani Poduvalsyar, Trichur.

PART III-B.

Non-detailed Study.—

1. Rajani by K. Sivarama Krishna Sastri, Karamana (V. V. Press, Trivandrum).

Detailed Study.—

1. Aniruddhan by Vallathole Narayana Menon. (Kalamandalam Office, Mulakunnattukavu, Cochin State).
2. Kuchela Vṛttam, Vanchi Pattu, by Rama Purath Warriar. (Any Press).

Drama.—

- Ascharya Chudamani by Kunhi Kuttan Tampuran. (B. V. Book Depot, Trivandrum).

Text-Books for the Examinations of 1939.

ENGLISH.

1939.

Shakespeare.—

Midsummer Night's Dream.

Poetry.—

Selections as for 1938, viz.—

Wordsworth: The Leech Gatherer.

Byron: Waterloo (Childe Harold, Canto iii, 17 to 28 both inclusive).

Arnold: Sohrab and Rustum.

Prose.—

Detailed Study.—

Ruskin: Sesame and Lilies, Lectures I and II, (as for 1938).

Devanathachariar: English Prose Selections (Macmillan).

Non-detailed Study.—

Conan Doyle. The White Company.

Jepson: Short Stories, Old & New (Longmans).

Lady Hartog: The Living India (Blackie).

SANSKRIT.

1939.

The same as for 1938 (*Vide* p. 348).

MARATHI.

1939.

PARTS II AND III-B.

For Non-detailed Study.—

Kadambari-sara by P. G. Parakhi.

For Detailed Study.—

Poetry.—

Meghaduta (Purvardha) by K. S. Chiplunkar.

Ambarisakhyan in the Navanita—Moropant.

Prose.—

Daulat by N. S. Phadke.

Drama.—

Uttara-rama-carita by P. R. Godbole.

Grammar.—

- General Principles of Grammar with Prosody—Kelkar's Marathi Grammar—Bombay Book Depot.

ORIYA.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 349).

HINDI.

1939.

PART II.

Non-detailed Study.—

1. Gadadhara Sinha: Kadambari (Indian Press, Ltd., Allahabad).
2. Premchand: Saptasaroj (Hindi Pustak Agency, 203, Harrison Road, Calcutta).

Detailed Study.—

Prose.—

Gadya Maladarsha by Pandit Jiwan Shanker Yagnik, M.A., LL.B., Professor, Benares Hindu University—Publishers: Ram Prasad and Bros., Agra.

358 **TEXT-BOOKS IN LATIN, FRENCH, GERMAN, [APP.
ARABIC, PERSIAN, URDU AND HEBREW
FOR INTER. EXAMN., 1939.**

Poetry.—

Padya Prabha by Pandit Hari Shanker Sharma—Publishers:
Ram Prasad Bros., Agra.

PART III-B.

Same as under Part II omitting Saptasaroj by Premchand.

LATIN.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 350).

FRENCH.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 350).

GERMAN.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 350).

ARABIC.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 351)

PERSIAN.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 351).

URDU.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 351).

HEBREW.

1939.

PARTS II AND III-B.

The same as for 1938 (*Vide* p. 352).

SYRIAC.

1939.

PART II.

Prose.—

1. History of the Discovery of the Holy Cross.—Chresthomathy of Nestle. Edited London, Williams and Norgate. Pages 109 to 131.
2. Gospel of St. Mathew.—Chapters I to V.
3. Book of Psalms.—Psalms I to XV.
4. Bar-Habraeus—Nomo—Canon.—Chapter VII. Sections 1 to 3.

Poetry.—

Farewell of Moses and Aaron—Chresthomathy of Dr. Gismondi. (Pages 97 to 98).

Grammar.—

Paradigms and Exercises in Syriac—by T. H. Robinson.

PART III-B.

Same as for Part II.

TAMIL.

1939.

PART II.

Poetry.—

(Selections to be published by the University).

1. Purananuru—60 lines.
2. Nanmanikkadikai—60 lines.
3. Eladi—48 lines.
4. Kambaramayanaṁ, Kaikesi-sulvinaippadalam—200 lines.
5. Tiruvilaiyadarpuranaṁ, Viraku-virra-padalam—200 lines.
6. V. P. Subrahmanya Mudaliyar: Sarva-jana-japam—20 lines.
7. Nalvar-naṁmani malai, stanzas 21 to 40—100 Hues.
8. Sengalunirvinayakar-pillait-tamil, 10 stanzas—80 lines.
9. Alakar-antadi, 20 stanzas—40 lines.
10. Pamban Kumaragurudasa-svamigal-prabandham—40 lines.
11. Villiputturar Bharatam, Gurukulacarukkam, 50 stanzas—200 lines.

} Portion as for
1938.

Prose.—

Detailed Study.—

1. M. S. Tirunavukkarasu Mudaliyar : Stories of Tamil Poets, Part I (K. Palaniyandi Pillai & Co., Publishers, George Town, Madras).
2. Ceran-Cenguttuvan by M. Raghava Ayyangar, Chief Pandit, Tamil Lexicon Office, Madras.

Non-detailed Study.—

1. Manidan-ceyda-manpuru-ceyal (Longmans. Green & Co., Madras).
2. Naravahanadatta-caritam by S. Somasundara Desikar, 1/70, Mundakakkanniyamman Kovil Street, Mylapore, Madras.

PART III-B.

The same as for 1938 (*Vide* p. 353).

TELUGU.

1939.

PART II.

Poetry (Old)—

1. Nirvachanottararamayanam by Tikkana—Chapter VIII—IX—(103 verses—Verse 82 of Chapter VIII to Verse 50 of Chapter IX)—Seethavanavasamu.
2. Haravilasa by Sreenadha—Parvatitapassu.
3. Harischandra dvipada—by Gaurana—1 to 500 lines.

Poetry (Modern)—

4. Kurangi Kiratamu by V. Audiseshayya (Whole). (Copies can be had of M. S. Narasimha Rao, Achari Street, Nellore).
5. Veerasimhudu—by V. Ch. Sitaramaswami Sastri, University College of Arts, Waltair.

Drama.—

6. Vikramorvasiyamu—by V. Venkataraya Sastri, Mallikeswarar Street, George Town, Madras.

Prose.—

7. Natakopanyasamulu—by R. Anantakrishna Sarma, Maharaja's College, Mysore.
8. Mandhatrucharitra—by Venkatachari, Pandit, High School, Hospet.
9. Andhra Vachanamahabharatam—by Shataghantam Venkataranga Sastri, Aranyaparva, Aswasa III (to be had of S. V. Rangacharyulu, West Mambalam, Madras).

Non-detailed Study.—

10. Yavanadatta—by Varigonda Satyanarayana, Teacher,
Board High School, Gudur, Nellore District.
11. Dharmasamrajyamu—by G. J. Somayaji, University
College, Waltair.

Poetics.—

12. Kavyakalasangrahamu—by Tula Visvanadha Sastri,
Pachaiyappa's College, Madras.

PART III-B.

The same as for Part II with the following books omitted:—

1. Haravilasa by Sreenadha—Parvatitapassu.
2. Veerasimhudu.
3. Dharmasamrajyamu.
4. Andhra Vachana Mahabharatam.

KANNADA.

1939.

PARTS II AND III-B.

Poetry.—

1. Jaimini Bharata by Lakshmisā, Sandhis 23 and 24.
(Bala Sahitya Mandala, Mangalore).
2. Pampa Ramayana, Aswasa IV. Karnataka Sahitya
Parishat Edition. (Karnataka Sahitya Parishat Office,
Bangalore City).

Drama.—

1. Ratnavali Nataka by Basavappa Sastri. (B. Mahadeva
Sastri, Kerlapur P. O., Hassan District, Mysore State).
2. Bhasana Ekanka Natakagalu by L. Gundappa, M.A.—
Oorubhanga (Karnataka Sangha, Central College,
Bangalore City).

Modern Poetry.—

Hannu Kayi K. Sankara Bhatta.

Portions to be Studied—

- (1) Kavya Samadhi.
- (2) Panditana Payana.
- (3) Huttu Nadu.

(Bala Sahitya Mandala, Mangalore).

Modern Prose.—

Buddha by C. K. Venkataramayya, M.A., LL.B., (Satya Sodhana Book Depot, Fort, Bangalore).

For Non-detailed Study.—

1. Sathwasara by V. T. Kulkarni (Galaganath). (Bala Sahitya Mandala, Mangalore).
2. Hassan Topi by H. Bhima Rao. (Saraswathi Printing Works, Mangalore).

MALAYALAM.

1939.

PART II.

Non-detailed Study.—

1. Mōcanam by A. Narayana Poduval—(Ramanuja Book Depot, Trichur).
2. Kapālakundala by V. Krishnan Thampi, B.A., College of Arts, Trivandrum.

Detailed Study.—*Poetry.*—

1. Ramayanam, Irupattunālu Vṛttam, 1st Six Vṛttams (any Press).
2. Kucela Vṛttam—Vanchi Pattu—Ramapurathu Warriar (any Press).
3. Sahitee Santanam by K. Parameswara Kurup (Norman Printing Bureau, Calicut).
4. Taraharam by Ulloor S. Parameswara Ayyar, M.A., B.L.—Revised Edition (Kamakalaya Press, Trivandrum).

Drama.—

1. Swapnavasavadatham by Vallathole, Mulakunnathu Kavū, Cochin State.

Prose.—

1. Sahityasarani (omitting the 1st Essay) by D. Padmanabhan Unni, M.A., Union Christian College, Alwaye.
2. Virutan Sanku by K. Achyuta Menon, B.A., B.L., C/o. C. Kunhi Rama Menon, Chempookavu, Trichur.

PART III-B.

The same as for 1938 (*Vide* p. 356).

Text-books for the Examinations of 1940.

ENGLISH.

1940.

(Will be prescribed later).

SANSKRIT.

1940.

PARTS II AND III-B.

Same as for 1939, (*Vide* page 357) with the change that the *Bhāṣakathāsāra* be replaced by the *Nāṭaka-kathāsaṅgraha* by Pandit V. Anantachar, pages 1 to 53, to be had of Ram Narayan Lal, Bookseller and Publisher, Allahabad or to be had of Mr. V. Ananthachar, Krishnapuram, Kodambakkam Post, Madras.

MARATHI.

1940.

PART II.

For non-detailed study.—

“Me” Samkshipta Ed. Aryabhushan Press, Poona.

For detailed study.—

Poetry.—

1. Meghduta (Uttarārdha) by Krishnashastri Chiplunker.
2. Ambarishakhyā as in Navanita.

Prose.—

Daulat by N. S. Phadke.

Drama.—

Mrichhakatika by G. B. Deval.

Grammar.—

General principles of Grammar and Prosody with reference to the Texts.

PART III—B.

The same as under Part II, with the following omissions:—
Ambarishakhyā and Mrichhakatika.

ORIYA.

1940.

PART II.

The same as for 1939, (*Vide* page 357).

PART III—B.

The same as for 1939, (*Vide* page 357).

364 TEXT-BOOKS IN HINDI, LATIN, FRENCH, [APP.
GERMAN AND ARABIC FOR INTER. EXAMN., 1940.

HINDI.

1940.

PARTS II AND III-B.

The same as for 1939, (*Vide* page 357).

LATIN.

1940.

PARTS II AND III-B.

Vergil: Aeneid IV.

Cicero: Pro Archia.

Livy: Book II.

FRENCH.

1940.

PARTS II AND III-B.

X. de Maistre: Voyage autour de ma Chambre (Macmillan).

Boielle: 42—62.

Racine: Bérénice, O.U.P.

A. Dumas: Pages Choiesies, Edit. by B. L. Templeton
(O. Clarendon Press).

GERMAN.

1940.

PARTS II AND III-B.

Eichendorff: Aus den, Leben eines Taugenichts.
Edit. C. Osthaue.

Helmholtz: Die Wechselswirkung der Naturkrafte.
Edit. by Bussier. Heath.

Korner: Zriny. Edit. by F. Holzwarth.

H. G. Fielder: Book of German Verse Nos. 221—223,
230—238. (O. Clarendon Press).

ARABIC.

1940.

PARTS II AND III-B.

Prose.—

Kalilah-wa-Dimnah, first 200 pages excluding Muqaddimah.

Poetry.—

Qasidatul Burdah: Mu'allaqah—Zuhair.

Grammar.—

Asas-i-Arabi or Thatcher's Arabic Grammar.

PERSIAN.

1940.

PARTS II AND III-B.

Prose and Poetry.—

A'ina-i-Ajam by Iqbal.

Farsi Jadid, Part II.

Intiqam Khahan-i-Mazdak, Part I.

Grammar.—

Jami-ul-Qawa'id.

URDU.

1940.

PART II.

Prose.—

Kayinath-i-Adab, Parts II and IV.

Poetry.—

'Jazbat-i-Fitrat—Barni.

Non-detailed.—

Azad Kay Karnamy, Vol. I.

Prem Pachisi, Vol. I.

Grammar.—

Assas-i-Urdu.

PART III-B.

Prose.—

Mawizai Hasnah.

Nairang-i-Khiyal, Part I.

Poetry.—

Diwan-i-Hali—Qit'at & Ghazliyyath.

A'lam-i-Khiyal—Showq Qudwayi.

Non-detailed.—

Prem Pachisi, Vol. I.

Alhamrah Kay Afsanay.

HEBREW.

1940.

PARTS II AND III-B.

Psalms, 73—89 (inclusive).

Samuel Book II.

Micah.

Grammar:—

Davidson's Hebrew Grammar.

SYRIAC.

1940.

(Text-books will be prescribed later).

TAMIL.

1940.

PART II.

Poetry.—

(Selections to be published by the University of Madras).

- | | | |
|--|---|-------------------|
| 1. Purananuru—60 lines | } | Same as for 1939. |
| 2. Nanmanikkadikai—60 lines | | |
| 3. Kambar: Kaikesi Sulvaip-padalam—200 lines | | |
| 4. Tiruvilaiyadarpuranam: Virakuvirra-padalam—200 lines. | | |
| 5. Manimekalai: Athirai-piccai-yitta-kathai—135 lines. | | |
| 6. Chulamani: Thuduvidu-carukkam—400 lines. | | |
| 7. Tiruvidai-k-kazhi Murugan Pillai-t-tamil—40 lines. | | |
| 8. Mayilai-t-tiripandadi—40 lines. | | |

*Prose.—**Detailed Study.—*

1. Kiristavamum Tamilum (Mayilai Seeni Venkataswami, 59, Karneswarar Koil Street, Mylapore).
2. Pangayacclvi, (Kothandapani Pillai, B.A.).

Non-detailed Study.—

1. Meenakshisundaram Pillai-caritram, Part I. (Mahamahopadhyaya Dr. V. Swaminatha Ayyar, Thyagaraja Vilasam, Triplicane).
2. Palvakai-k-katturaikal (T. A. Kanakasabapathi, Palaniyandi Pillai & Co., G. T., Madras).

PART III-B.

Poetry.—

- | | | |
|----------------------------|---|--|
| 1. Kalavazhi | } | University Intermediate
Selections. |
| 2. Sirupancamulam | | |
| 3. Kalingattupparani | | |
| 4. Vikrama Cola Devar Ula. | | |
| 5. Kumaraguruparar | | |
| 6. Tondaimandala Satakam | | |
| 7. Silappadikaram | | |

Prose.—

1. Janavinodini, Part IV, Edited by C. R. Namasivaya Mudaliar.
2. Tamil Essays by T. Chelvakesavaraya Mudaliyar.

TELUGU.

1940.

PART II.

Poetry (Old)—

1. Nirvachanottararamayanamu by Tikkana—Chapter VIII—IX. (Verse 82 of Chapter VIII to Verse 50 of Chapter IX). 103 verses. Seetavanavasamu. No. 29 of the University Intermediate Selections in Telugu.
2. Haravilasamu by Sreenadha, Parvatitapassu—34 verses. No. 52 of the University Intermediate Selections in Telugu.

Poetry (Modern).—

3. Shajee by P. Narayanachari, Sanskrit College, Tirupati.

Drama.—

4. Malavikagnimitramu by K. Veerasalingam Pantulu. (Copies to be had from the Secretary, Hitakarini Samaj, Rajahmundry).

Prose.—

5. Bana gadya Kathalu by Sreepada Lakshmipati Sastry, Junior Lecturer in Telugu, University of Madras, University Buildings, Madras.

Non-detailed study.—

6. Dasikanya by C. Lakshminarasimham, Addepally Lakshmanaswamy & Sons, Rajahmundry.

PART III-B.

Same as for Part II.

KANNADA.

1940.

PART II AND PART III-B.

Poetry.—

(The following portions from the University Intermediate Selections).

1. Jaimini Bharata, stanzas 1—187, pages 1—35 both inclusive.
2. Karnataka Kadambari, Numbers 1—120 inclusive, pages 36—51 both inclusive.

Modern Poetry.—

"Honniya Maduve" as in "Nalme" by K. Sankara Bhatta
(Satya Sodhana Book Depot, Fort, Bangalore City).

Detailed Prose.—

"Harsha-varadhana" by C. K. Venkataramayya, M.A., LL.B.
(Satya Sodhana Book Depot, Fort, Bangalore City).

Drama.—

1. "Ratnavali" by Basappa Sastry (Nanjagud Srikanta Sastry, Asthana Vidwan, Mysore).
2. "Dutavakya" as in Bhasa's Single Act Plays by L. Gundappa (Karnataka Sangha, Central College, Bangalore).

Non-detailed Study.—

1. Bharata-Khandada Jivajyotigalu by H. Chidambarayya, to the end of the life of Nanak, pages 1—123 inclusive. Price reduced to Re. 1 only. (Karnataka Sikshana Samiti, Dharwar).
2. Panchamrita by Vidvan K. V. Krishna Bhatta (omitting the ten subjects treated wholly in verse and the last Essay in prose on Keppayya Sastry *alias* Kalidasa II)—H. Bhima Rao, C/o. Saraswati Printing Works, Ltd., Mangalore.

MALAYALAM.

1940.

(Text-books will be prescribed later).



APPENDIX III.

B. A. DEGREE EXAMINATION.

COURSES AND SYLLABUSES.

Mathematics (Main.)

Groups (i-a), (i-b) and (ii-a—Main).

(1) ALGEBRA AND TRIGONOMETRY.

Algebra.—Inequalities, limits, elementary theorems in convergence and divergence of series. The binomial theorem for a rational index. Exponential and logarithmic series. Partial fractions. Elementary methods for the summation of series. The elementary properties of continued fractions. Indeterminate equations of the first degree. Elementary properties of determinants. Typical graphs: $y = ax^n$, $y = a/x^n$, $y = ax + b + c/x$. Graphical solution of cubic and biquadratic equations. General properties of the equation of the n th degree and its roots and coefficients. Simple transformations of equations. Reciprocal equations. Approximate solution of numerical equations.

Trigonometry.—Fuller treatment of the Intermediate Course. Quadrilaterals inscribed in and circumscribed about circles. Regular polygons. Limits of $\sin x/x$ and $\tan x/x$ as x tends to zero. De Moivre's theorem and its immediate applications. Summation of elementary trigonometrical series.

(2) CALCULUS.

Calculus.—Standard forms and fundamental processes of differentiation and integration. Simple applications of the derivative to geometry, algebra, mechanics and physics. Maxima and minima values of a function of one variable. Theorem of mean value (graphical proof). Approximations and small errors. Curvature; Cartesian formula for the radius of curvature. Integration by substitution. Integration by parts. Integration regarded as summation, with simple applications to areas, volumes and surfaces and to mechanics. Solution of the differential equation of simple harmonic motion, and also linear equations of the following types:—

$$(1) \frac{dy}{dx} + Py = Q, \text{ P and Q being functions of } x.$$

$$(2) a \frac{d^2y}{dx^2} + b \frac{dy}{dx} + c = e^{mx} \text{ or } \cos mx \text{ or } \sin mx, \text{ a, b and c being constants.}$$

(3) GEOMETRY.

Pure Geometry.—As in the Intermediate Course, and, in addition, harmonic ranges and pencils. Inversion.

Geometry of the line, plane, sphere, the right cylinder and the right cone.

The fundamental geometrical properties of the conic sections.

Analytical Geometry.—The Cartesian equations of the straight line and the circle referred to rectangular axes, the parabola, ellipse, and hyperbola referred to their principal axes, and the rectangular hyperbola referred to its asymptotes. The general equation of the second degree. The polar equations of the straight line, circle and the conic. Simple problems on the above.

Geometrical Conics.

Such leading properties of Conic Sections, as are specially suitable for treatment by elementary geometry.

Detailed Syllabus.

Focus, directrix, definition of the conic ; shape, axes of symmetry, centre, foci. The ellipse as orthogonal projection of a circle.

Geometrical treatment of the following propositions and their immediate applications.

1. If a chord PQ of a conic, whose focus is S, meets the corresponding directrix in R, SR is a bisector of PSQ.

2. The tangents from any point to a conic subtend equal or supplementary angles at a focus.

3. The semi-latus-rectum is a harmonic mean between the segments of a focal chord.

4. The locus of midpoints of parallel chords of a conic is a diameter.

5. The sub-tangent of a parabola is bisected at the vertex, and the sub-normal is constant.

6. The foot of the perpendicular from the focus on any tangent of a parabola lies on the tangent at the vertex.

7. The focal chord of a parabola parallel to the tangent at P is equal to 4 SP.

8. $PV^2 = 4 SK \cdot KV$, where PV is an ordinate to the diameter of the parabola through K.

9. The sum or difference of the focal distances of any point on a central conic is constant.

10. The tangent and normal to a central conic at P are bisectors of SPS'.

11. The feet of the perpendiculars from the foci on any tangent lie on the auxiliary circle, and the rectangle under these perpendiculars is constant.

12. The sum of the squares of conjugate diameters of an ellipse is constant.

13. The locus of meets of perpendicular tangents of a conic is a circle, which reduces to a straight line when the conic is a parabola.

14. Every plane section of a right circular cone or cylinder is a conic.

(4) DYNAMICS.

Dynamics.—Resolution and composition of displacements, velocities, and accelerations. Curves of speed and velocity diagrams. Motion of a particle in one plane under constant accelerations. Simple harmonic motion; composition of simple harmonic motions. Angular velocity and angular acceleration; moment of velocity.

Absolute units of force. Resolution and composition of forces. Angular momentum: moments of inertia in simple cases; the pendulum; determination of g . Work, energy, conservation of energy; energy diagrams. Impact; the ballistic pendulum. Simple cases of the dynamics of strings. Dimensions of dynamical units. Conditions of equilibrium of a body acted on by forces in one plane. Moments, couples. Centre of mass. The theory of simple machines. Laws of friction. Graphical methods with simple applications.

Group (i-a) only.

ASTRONOMY.

The apparent motion of the heavens. Circumpolar stars. The principal constellations and the most conspicuous stars.

The Celestial Sphere.—Points and lines on it:—Horizon, zenith, poles, meridian, etc.: the equinoctial points, etc.

Celestial co-ordinates; right ascension, declination, etc., latitude and longitude.

The transit circle, the equatorial, the clock, the transit, theodolite. The sextant and the chronometer.

Phenomena depending on change of latitude and longitude of the observer. Magnitude of the earth.

The apparent annual motion of the sun. The constellations of the zodiac. The ecliptic and its obliquity. The equinoxes and the solstices. The earth's motion round the sun. The seasons.

Sidereal time, apparent solar time, mean solar time, equation of time. Standard time (India). Civil and astronomical reckoning. Conversion of time.

Explanation of astronomical refraction and parallax, Twilight.

Determination by observation of clock error and rate, of right ascension and declination of a heavenly body, and of the latitude and longitude of a station.

The solar system, and the motion of the planets, Kepler's laws. Comets and meteors.

The motion of the moon and her phases. The plane of her orbit. The nodes and their motion. The moon's sidereal and synodic periods. Her diameter and distance.

Distances and magnitudes of the sun, moon and planets.

Causes of the eclipses of the sun and the moon. Ecliptic limits. Number of eclipses in a year. The Calendar. The use of the Nautical Almanac.

HYDROSTATICS, PROPERTIES OF MATTER AND HEAT.

Hydrostatics.—Thrust of fluid on plane and curved surfaces. Centre of pressure in simple cases. Floating bodies and conditions of stability. Properties of gases; determination of heights by barometer. Pumps, pressure gauges, and hydrostatic machines. Capillary phenomena and their explanation by surface tension; general theory of surface tension.

Properties of matter.—Elasticity. Hooke's Law. Compressibility of gases (at high and low pressure) and liquids. Compressibility and rigidity of solids; the elastic limits. Strains due to simple longitudinal pull; Young's modulus and its expression in terms of k and n . Bending in one plane of bars of simple cross sectional area; flexural rigidity; application to girders. Simple twisting of wires of circular cross sectional area by couple in plane at right angles to length; torsional rigidity; applications to torsion balance, and shafts.

Diffusion of liquids and gases; analogy with conduction of heat. Osmosis, viscosity. Pressure of a gas and its explanation on the kinetic theory; Avogadro's hypothesis; Van der Waal's equation.

Heat.—The methods of calorimetry and thermometry. Vapour pressure, critical temperature and pressure. Conduction and diffusion of heat and the determination of constants. Radiation and absorption; laws of cooling. Theory of exchanges; methods of measuring radiation. Laws of thermodynamics; Simple applications.

Group (i-b).

Optional Subjects.

1. ASTRONOMY.

The stars, the rotation of the earth, the celestial sphere. The principal instruments: determination of latitude and longitude. Distance and magnitude of the heavenly bodies. Refraction.

Simple problems connected with the diurnal motion. Apparent annual motion of the Sun, aberration; the equation of time. The nautical almanac. The motion of the moon; eclipses.

The stellar system.

Detailed Syllabus.

The most conspicuous stars. The principal constellations. The signs of the Zodiac. Double and multiple stars. Variable stars. Nebulae, comets and meteors.

The apparent motion of the heavens and its explanation by the rotation of the earth. Arguments and proofs for the earth's rotation. Foucault's gyroscope and pendulum experiments.

The celestial sphere and the different systems of co-ordinates.

The telescope. Reflectors and refractors. Advantages and disadvantages of the two. The transit theodolite. The transit instrument, meridian circle, the clock. The chronometer. The chronograph. The equatorial. Sextant. Zenith telescope. The principal errors of the transit instrument and their corrections.

Determination by observation of clock error and rate; the right ascension and declination of a heavenly body; latitude and longitude of a place on land or sea. Summer's method.

Form and size of the earth. Phenomena depending on a change of the observer's place on the earth. Parallax (diurnal and annual). Distance and magnitude of the sun, moon and the planets and stars.

The atmosphere and the effect on astronomical observations. The tangent formula for refraction. Cassini's formula. Twilight.

Simple problems connected with the diurnal motion. (Right angled spherical triangle; sine and cosine formulæ). The apparent annual motion of the sun and its consequences. The ecliptic and its obliquity. The position of the ecliptic at any given instant. The equinoxes and solstices. Determination of the first point of Aries and the obliquity of the ecliptic. Effects of precession and nutation.

The earth's motion round the sun. Aberration and its effects. Kepler's Laws and Newton's deductions therefrom. True anomaly, mean anomaly and lengths of the seasons. Sidereal Time. Apparent solar time. Mean solar time. Equation of time. The calendar. The use of the Nautical Almanac. Standard Time (India).

The motion of the moon and her phases. The nodes and their motion. The moon's sidereal and synodic periods. Eclipses and their causes. Ecliptic limits. Number of eclipses in a year. The Saros.

The solar system and the direct and retrograde motions of planets (coplanar circular orbits). The stationary positions, durations of direct and retrograde motions. Phases of planets.

A general descriptive idea of the stellar system.

Books recommended for Study.

1. Barlow and Bryan: Astronomy.
2. Ball: The Story of the Heavens.
3. Moulton: Introduction to Astronomy.
4. Russell, Dugan and Stewart: Astronomy, Volume I.
5. Spencer Jones: General Astronomy, Chapters XII to XIV, outlines only.
6. Parker: Astronomy.
7. Astronomy by Dr. H. Subrahmanya Ayyar.

Books for Reference.

1. Ball: Spherical Astronomy.
2. Russell, Dugan and Stewart: Astronomy, Volume II.
3. Hutchinson: Splendour of the Heavens, Volumes I and II.
4. Godfray: Astronomy.

2. ELEMENTS OF STATISTICS.

The course is intended to cover the elements of statistical method, and to give an introduction to the methods of computation.

(a) Elements of Statistical Method.

Collection of statistics, tabulation, computation, frequency distribution, correlation table.

(b) Applications.

A candidate will be expected to show some knowledge of the application of statistical methods to the following: index numbers, mortality table.

(c) Practical Work.

A candidate shall have undergone a course of practical instruction which should extend to about twenty-five hours.

This should cover:—

Computation and plotting, including use of tables and of semi-logarithmic paper, tabulation, use of the histogram, sketching of frequency curve from histogram; fitting of normal curve; determination of deviation, medium. Simple case of correlation co-efficient.

Exercises on subjects in (b).

Detailed Syllabus.

(a) Elements of Statistical Method.

Collection of Statistics.	Objects in view. Census as an example. Variables. Scheme. Principles to be observed. Size of samples required.
Tabulation.	Classes. Choice of class interval.
Computation.	Semi-logarithmic paper, Multipli- cation Tables, Barlow's Tables. Slide rule, Pearson's Tables.
Frequency Distribution, (One variable).	Histogram. Frequency polygon. Chance distribution, binomial, normal curve, frequency curve. Average; mean, median, mode. Skewness. Dispersion, mean deviation, stand- ard deviation. Ogive, quartiles, probable error, Sampling.
Correlation Table, (Two variables)	Co-efficient of correlation, regres- sion lines, correlation ratio.

The following books are recommended for study:—

- (1) A first course in Statistics by C. Jones, (Part I),
(Bell and Sons).
- (2) A first course in statistical method by G. I. Gavett,
(McGraw-Hill Book Company, London).

3. ECONOMICS.

Detailed Syllabus.

Introductory.—Nature and Scope of Economics—Place of Economics among Social Sciences. Principal Economic Concepts. Economic Laws and Methods of Economic Science.

Consumption.—Wants of Man—Utility—Marginal Utility—Bernoullian Hypothesis, Law of Demand, Demand Curves, Elasticity of Demand—Consumers' Surplus.

Production.—Agents of Production—Land—Labour—Capital—Laws of Production—Increasing, Decreasing and Constant Returns, Marginal Cost—Law of Decreasing and Increasing Return as applied to Land and Industry. Effect of Tax or Bounty on Production.

Value and Exchange.—Evolution of the Market—Value—Theories of Value—Analysis of Supply and Demand—Curves of Demand and Supply—Equilibrium Position—Oscillation about Equilibrium—Price—Value during Long and Short Periods—Prices under Free Competition—Theory of Monopoly Prices.

Mechanism of Exchange.—Money—Evolution and Functions of Money. The Quantity Theory of Money. Systems of Money—Gold Standard and its Variants—History of Indian Currency—Credit, its Meaning and forms—Credit and Prices—Paper Money—Convertibility and Inconvertibility—Purchasing Power.

Distribution.—General Theory of Distribution—Law of Rent, Interest—Profits and Wages and the Causes of their Variation—The National Income and its Distribution—Problems of Distribution.

Public Finance.—The Economic Functions of the State—Public Expenditure and Sources of Public Revenue. General Principles of Taxation—Direct and Indirect Taxes, Public Debts.

International Trade.—The Basis of International Exchange—Free Trade and Protection—Tariffs and Bounties—Balance of Trade—Foreign Exchanges—The Rupee Exchange.

Index Numbers.—Their Uses and Methods of Formation.

N.B.—Candidates will be expected to use mathematical and graphical methods in the development of the subject.

4. PURE GEOMETRY.

Properties of triangles. Coaxal systems of circles. Inversion. Conical and orthogonal projections. Cross ratios. Projective ranges and pencils. Involution. Non-focal properties of conics. The cross-ratio properties of conics. Reciprocation. Duality. Circular points.

Detailed Syllabus.

Properties of triangles (isogonal conjugates, Lemoine points and the two Lemoine circles). The coaxal system of circles; limit points. The theory of inversion.

General properties relating to conical and orthogonal projection. Imaginary elements and the principle of continuity. Desargues's theorem of projective triangles. Cross ratios. Projective ranges and pencils are equicross and conversely. Two projective ranges on the same straight line have two self-corresponding points. Harmonic section; harmonic property of the pole and polar of a circle; of the complete quadrilateral and the complete quadrangle. Pappus's theorem.

The involution range and the involution pencil. The double elements are separated harmonically by every pair of corresponding elements. If AA^1 , BB^1 , CC^1 are in involution, the ranges $ABCA^1$, $A^1B^1C^1A$ are equicross and conversely. Two involution ranges on the same line have one and only one common corresponding pair. The definition of the circular points by means of the orthogonal involution pencil.

The study of the conic as projection of the circle. Non-focal properties common to all conics. Properties of the parabola, ellipse, hyperbola, rectangular hyperbola.

Cross ratio properties of conics. Pascal's and Brianchon's Theorems. Projective and involution ranges on a conic.

Reciprocation with respect to a conic, and with respect to a circle. Duality.

Every circle passes through the circular points, and every conic through the circular points in a circle. Concentric circles have double contact at the circular points. The cross ratio $O(-\infty -\infty -AB)$ depends only on the angle AOB . The definition of the foci of a conic by means of the circular points.

5. ANALYSIS.

i. Differential and Integral Calculus.

Limit of a function. Differentiation. Mean value theorem and Taylor's series. Geometrical applications.

Integration as an inverse process. Reduction formulae.

Integral as the limit of a sum. Simpson's rule.

Application of integration to mensuration.

ii. Infinite Series and Products

Infinite sequences. Sequence definition of e .

Tests for series. Exponential theorem.

Infinite products, $\sin x$ and $\cos x$ as infinite products.

The complex variable, the elementary transcendental functions of the complex variable.

iii. Differential Equations.

Formation of differential equations.

Solution of the simplest types.

Detailed Syllabus.

(i) Differential and Integral Calculus.

Monotonic functions. Continuous and discontinuous functions with graphical illustrations. Limit of a function. Standard limit theorems required for differentiation,

Rules of differentiation. Successive differentiation. Leibniz's Theorem.

Rolle's Theorem. Mean value theorem with Lagrange's and Cauchy's form of remainder. Applications to maxima and minima, to indeterminate forms. Infinite Taylor expansions of elementary functions like $\exp x$, $\sin x$, $\log(1+x)$, etc., proofs.

Application of the derivative to plane curves; tangent; normal, etc., in Cartesian and polar co-ordinates. (p, r) equations, pedals.

Curvature—formulae in rectangular and polar co-ordinates. Intrinsic equations, evolutes, envelopes.

Properties of the cycloid, cardioid, and catenary.

Integration as an inverse process. Standard forms. Reduction formulae.

Definite integral as a limit of a sum. Proof of the existence of limit when function is monotonic. Reduction formulae for definite integrals. Approximate integration. Simpson's rule.

Application of integrals to mensuration. Areas and lengths of plane curves in Cartesian and polar co-ordinates. Volumes and areas of surfaces of revolution. Centre of inertia, moments of inertia, of plane laminas and solids of revolution.

(II) *Infinite Series and Products.*

Infinite sequences and the classification of their modes of behaviour. Monotonic sequences. Bounded monotonic sequences tend to a limit (only intuitive proof). Standard limits including

limits of $\left(1 + \frac{1}{n}\right)^n$, $\left(1 - \frac{1}{n}\right)^{-n}$.

Cauchy's condensation test. Dirichlet's and Abel's tests. Absolutely convergent double series. Theorems on the multiplication of absolutely convergent series. Application to the proof of the exponential theorem.

Convergence of infinite products $\prod (1 + a_n)$, $\prod (1 - a_n)$, when $0 < a_n < 1$

Infinite products for $\sin x$, $\cos x$.

Power series in a complex variable; circle of convergence. Simple properties of $\exp z$, $\log z$, $\sin z$, $\tan z$, etc., z being a complex variable. Easy examples in the summation of trigonometric series, and in the expansions of trigonometric functions including inverse functions.

(iii) *Differential Equations.*

Formation of Differential Equations.

Variable Separable.

Homogeneous Equations $M + N \frac{dy}{dx} = 0$.

Linear Equations $\frac{dy}{dx} + Py = Q$.

Geometrical interpretation of a differential equation of the first order and first degree.

Orthogonal trajectories, (Cartesian and polar co-ordinates).

Differential equation of the second order of the following types:

$$\phi \left(\frac{d^2 y}{dx^2}, \frac{dy}{dx}, Vx \right) = 0,$$

$$\phi \left(\frac{d^2 y}{dx^2}, \frac{dy}{dx}, y \right) = 0,$$

$$\frac{d^2 y}{dx^2} + P \frac{dy}{dx} + Q y = R.$$

where P , Q , R are functions of x , and a solution of the equation with the right-hand side zero is known.

Linear equations with constant coefficients:

$$\frac{d^n y}{dx^n} + A_1 \frac{d^{n-1} y}{dx^{n-1}} + \dots + A_n y = V$$

where V is a sum of functions of the type $\exp nx$, $\sin nx$, $\cos nx$; x^n .

Simple geometric and dynamical applications of the above equations.

(ii-b) *Physics—Main.*

The course includes a more extended study of the matter included in the Intermediate course and in addition the following:—

Dynamics.—Resolution and composition of displacements, velocities, and accelerations. Curves of speed and velocity diagrams. Motion of a particle in one plane under constant acceleration. Simple harmonic motion; composition of simple harmonic motions. Angular velocity and angular acceleration; moment of velocity.

Absolute units of force. Resolution and composition of forces. Angular momentum; moments of inertia in simple cases. The pendulum; determination of g . Work, energy, conservation of energy, energy diagrams. Impact. Dimensions of dynamical units. Conditions of equilibrium of a body acted on by forces in one plane. Moments, couples, centre of mass. The theory of simple machines. Laws of friction.

Properties of matter.—Elasticity: Hooke's law; the elastic limits. Compressibility of gases at high and low pressure. Rigidity of solids. Strains due to simple longitudinal pull; Young's modulus and its expression in terms of k and n . Experimental study of bending in one plane of bars of simple cross sectional area; application to girders. Simple twisting of wires of circular cross section by couple in plane at right angles to length; torsional rigidity; applications to torsion balance, and shafts.

Diffusion of liquids; analogy with conduction of heat. Osmosis. Experimental study of viscosity. Pressure of a gas and its explanation on the kinetic theory; Avogadro's hypothesis; Van der Waal's equation.

Hydrostatics.—Thrust of fluid on plane surfaces. Centre of pressure in simple cases. Floating bodies and conditions of stability. Properties of gases. Pumps, pressure gauges, and hydrostatic machines. Capillary phenomena and their explanation by surface tension

Heat.—Expansion, calorimetry and thermometry. Vapour pressure; critical temperature and pressure. Conduction of heat and determination of conductivity. Radiation and absorption; laws of cooling. Theory of exchanges; methods of measuring radiation. Mechanical equivalent of heat; Carnot's theorem; absolute scale of temperature.

Light.—Illumination; photometry. Aberration, spherical and chromatic; direct vision spectroscope.

Velocity of light. The wave theory. Simple interference phenomena. Huygens' principle. Explanation of straight line propagation, and reflexion and refraction of light at plane surfaces. Simple diffraction phenomena. Plane transmission gratings and wave length determination. Spectrum analysis; Doppler's principle. Double refraction and polarization of light. Rotation of plane of polarization; simple applications.

Magnetism.—Forces on a magnet in a magnetic field. Determination of the axis and moment of a magnet; determination of field strength. Magnetic shell: magnetic potential due to a shell of uniform strength. Total normal induction; Gauss' theorem; number of lines of force. Magnetic induction in iron, etc. Theory of magnetism.

The magnetic field of the earth; the magnetic elements and their determination.

Electricity.—Electric capacity; specific inductive capacity. Distribution of electricity on surface of conductors. Mechanical force on charged conductors; energy of electrified systems.

Wheatstone's bridge; specific resistance; resistance thermometers. Conductivity of electrolytes; ionization; migration

phenomena; accumulators; standard cells. The potentiometer system of measurement. Thermoelectric phenomena. Electromagnetic induction; co-efficients of induction; induction coils; mechanical force on conductors carrying current; moving coil instruments. Lenz's law; illustration from dynamos and motors. Elements of Experimental Wireless and X-rays.

The experimental study of the continuous current dynamo and motor and of the alternating current dynamo. General principles of the application of electricity to lighting, power transmission, telegraphy, etc.

Sound.—The transmission of energy through material media by wave motion; speed of propagation of waves of permanent type. Nature of musical sound; scales. The vibration of strings and gas columns; resonance. Interference and diffraction phenomena. Analysis of sound. Measurement of wave length, velocity and pitch.

A practical examination will be held to test the candidate's acquaintance with the phenomena and his ability to show them, as well as his ability to make physical measurements. At the practical examination candidates must submit to the Examiner or Examiners their laboratory note-books duly certified by their professors or lecturers as a *bona fide* record of work done by the candidates.

DETAILED SYLLABUS IN DYNAMICS, STATICS AND HYDROSTATICS.

THEOREMS.

If a moving point posses simultaneously velocities which are represented in magnitude and direction by the two sides of a parallelogram drawn from a point, they are equivalent to a velocity which is represented in magnitude and direction by the diagonal of the parallelogram passing through the point.

The relative velocity of one point B with respect to a second point A is obtained by compounding with the velocity of B a velocity which is equal and opposite to that of A.

To determine graphically, by means of a velocity-time curve the distance described in a given time by a moving point.

A point moves in a straight line starting with velocity u and moving with constant acceleration a in its direction of motion; if v be the velocity at the end of time t , and s be its distance at that instant from its starting point, then

$$(1) \quad v = u + a t$$

$$(2) \quad s = u t + \frac{1}{2} a t^2$$

$$(3) \quad v^2 = u^2 + 2 a s.$$

To derive the equation $F=ma$ from the second law of motion.

To show that the change of momentum of a particle in a given time is equal to the product of the force which acts on the particle and the time during which it acts.

To show that the kinetic energy of a particle is equal to the product of its mass and one half of the square of its velocity.

To show that the change of kinetic energy per unit space is equal to the acting force.

To find the work done in stretching a spring by means of an energy diagram.

A smooth sphere or particle whose co-efficient of restitution is 'e' impinges obliquely on a fixed plane; find the change in its motion.

If a particle describe a circle of radius r with uniform speed v , to show that the acceleration is $\frac{v^2}{r}$ directed towards the centre of the circle.

A particle is projected into the air with a given velocity and direction of projection; show that its path is a parabola and find the range on the horizontal plane through the point of projection, and the time of flight.

To find the velocity, acceleration and the periodic time of a point executing simple harmonic motion.

To find the resultant of two S.H.M's of the same period in the same straight line.

To find the resultant of two S.H.M's of the same period at right angles.

To find the period of oscillation of a simple pendulum for small amplitudes.

To find the period of oscillation of a compound pendulum when the amplitude is small.

To show that the centres of suspension and oscillation are reversible.

To show that if a moving point describe a circle, its angular velocity about the centre of the circle is equal to its speed divided by the radius of the circle.

The moment of inertia of a body through an axis is equal to the sum of the moment of inertia of the body about a parallel axis through the centre of gravity and the product of the mass of the body into the square of the distance between the axes.

The moment of inertia of a plane lamina about a perpendicular to its plane and meeting it in a point O is the sum of the moments of inertia of the lamina about any two axes at right angles in the lamina and intersecting one another at O .

To find the moment of inertia of a thin uniform rod about an axis through the centre and perpendicular to the length.

To find the moment of inertia of a circular lamina about an axis passing through the centre perpendicular to its plane.

To find expressions for the angular acceleration, angular momentum and the kinetic energy of a body rotating about an axis.

To find the work done by a torque (or couple) for a given angle of twist.

If a particle be acted on by two forces represented in magnitude and direction by the two sides of a parallelogram drawn from a point, they are equivalent to a force represented in magnitude and direction by the diagonal of the parallelogram passing through the point.

If three forces acting at a point be represented in magnitude and direction by the sides of a triangle taken in order, they will be in equilibrium.

• If three forces acting at a point be in equilibrium, they can be represented in magnitude and direction by the sides of any triangle which is drawn so as to have its sides respectively parallel to the directions of the forces.

If three forces acting on a particle keep it in equilibrium each is proportional to the sine of the angle between the other two.

If any number of forces acting on a particle be represented in magnitude and direction by the sides of a polygon taken in order, the forces shall be in equilibrium.

To find the resultant of any number of forces in one plane acting upon a particle.

To find the conditions of equilibrium of any number of forces acting upon a particle.

To find the resultant of two parallel forces acting upon a body.

The algebraic sum of the moments of two or more forces about any point in their plane is equal to the moment of their resultant about the same point.

If three forces acting in one plane upon a rigid body keep it in equilibrium they must either meet in a point or be parallel.

Any system of forces acting in one plane upon a rigid body can be reduced to either a single force or a single couple or must be in equilibrium.

A system of forces in one plane acting upon a rigid body is in equilibrium if the sum of their components parallel to each of two lines in their plane be zero, and if the algebraic sum of their moments about any point be zero also.

Given the centre of mass of the two portions of a body to find the centre of mass of the whole body.

Given the centre of mass of the whole of a body and of a portion of the body, to find the centre of mass of the remainder.

To find the centre of gravity of a uniform rod, rectangular lamina, triangular lamina and tetrahedron.

To find the centre of gravity of a system of particles in the same plane at known distances from a fixed point.

To show that in a machine the mechanical advantage is equal to the product of the efficiency and the velocity ratio.

To find the mechanical advantage in the case of the following machines neglecting friction and weight of parts:—

1. The lever.
2. Pulleys—three systems.
3. The wheel and axle.
4. The inclined plane.
5. The screw.

To show that the coefficient of friction is equal to the tangent of the angle of friction.

The pressure at any point of a fluid at rest is the same in all directions.

To find the resultant thrust of a fluid on a plane surface

To find the centre of pressure when immersed in a liquid:—

1. of a rectangular lamina with one side in the surface.
2. of a triangle with one side in the surface.
3. of a triangle with a vertex in the surface and the opposite side horizontal.

To find the conditions of equilibrium of a body freely floating in a liquid.

If a body float freely and be slightly displaced so that it displaces the same quantity of liquid as before, then the body is in stable or unstable equilibrium according as the meta-centre is above or below the centre of gravity of the body.

To show that the product of the pressure and volume of any given mass of gas is proportional to its absolute temperature.

To show that surface tension is the same in all directions and at all points.

To show that the surface energy per unit area is numerically equal to the surface tension.

To find the relation between the radius of (1) spherical drop, (2) a spherical bubble of a liquid, and the surface tension and pressure.

To find an expression for the rise of a liquid in a capillary tube.

TEXT-BOOKS.

1938 and 1939.

Books for Study:—

The subject matter as given in the following books is to be studied, omitting portions not covered by the syllabus:—

Loney: Elements of Dynamics, and Statics and Hydrostatics.

Wagstaff: Properties of Matter.

Capstick: Sound.

Edser: Heat.

Edser: Light.

Hadley: Electricity and Magnetism.

A. W. Barton: Heat.

Reference:—

Edser: General Physics.

Catchpool: Sound.

Brooks and Poyser: Electricity and Magnetism.

Bedford: Practical Physics.

Searle: Experimental Elasticity.

Porter: Intermediate Course in Mechanics.

Poynting and Thompson: Heat.

Clay: Treatise on Practical Light.

Watson: Practical Physics.

Nightingale: Sound.

(ii-c) Chemistry—Main.

General Theoretical Chemistry and Physical Chemistry.—The methods of determining equivalents; atomic and molecular weights; the atomic theory; valency; osmotic pressure; the kinetic theory of gases; the properties of solutions; electrolysis and theory of electrolytic dissociation; the relations of the physical properties of substances to their chemical nature, with special reference to the relation of the plane of polarization, to refraction and dispersion, crystalline form, atomic and molecular volume, emission and absorption spectra.

The law of mass action; velocity of chemical change; the relations of chemical energy to heat, and to electrical energy.

The elements (excluding the rare metals) and their compounds studied in detail.

Organic Chemistry treated from an elementary standpoint comprising the following.—

Methods of purification of organic compounds. Qualitative and quantitative analysis. Empirical formulæ. Molecular weights of organic acids and bases. Molecular formulæ. Isomerism. Constitutional formulæ.

Paraffins. Alkyl halides. Alcohols. Alkyl esters of inorganic acids. Nitro-paraffins. Aldehydes and Ketones. Ethers. Fatty acids and their esters, etc. Fats, oils and soaps. Glycerol and its simple derivatives. Amines. Urea. Cyanogen compounds.

Olefines. Acetylenes, and their derivatives. Unsaturated acids. Geometrical isomerism. Dibasic acids of the oxalic series and their derivatives. Baeyer's Strain Theory. Acetoacetic ester. Tautomerism. Hydroxy-monobasic and polybasic acids with special reference to glycolic, lactic, malic, tartaric, and citric acids. Asymmetric carbon atom and optical activity. Simple Amino-acids. Sugars with special reference to Glucose, Fructose and Sucrose. Starch. Cellulose.

Benzene and its homologues. Sulphonic, Nitro-, Amino-, and halogen derivatives of aromatic hydrocarbons. Diazonium compounds and their reactions. Simple Azo-dyes. Phenols. Quinones.

Benzyl Alcohol, Benzaldehyde and Benzoic acid and their important derivatives. Acetophenone. Salicylic Aldehyde and Acid, Cinnamic Aldehyde and Acid, Anthranilic Acid, Phthalic Acids and their common derivatives. Laws of orientation and substitution in aromatic compounds. Triphenyl-methane dyes with special reference to Malachite Green, Pararosaniline and Rosaniline. Naphthalene and its more important substitution products. Anthracene, Anthraquinone, Alizarin. Colour and chemical constitution.

The practical examination in Chemistry will include—

1. Qualitative analysis, including analyses of mixtures of mineral substances.

2. Quantitative analysis, including (a) the estimation of alkalis, alkaline carbonates, and acids, by neutralization, (b) determinations involving the use of the permanganate, dichromate, iodine and thiosulphate processes, (c) the estimation of chlorides and cyanides by titration with silver nitrate, and also with thiocyanate, (d) gravimetric determinations of iron, calcium, copper, silver, lead, sulphuric acid, hydrochloric acid, phosphoric acid.

Candidates will be required to be able to standardize the solutions for volumetric analysis.

3. The determination of molecular weights.

4. Preparation of at least six simple organic substances, *e.g.* Chloroform, Ether, Ethylacetate, Acetic Anhydride, Urea, Nitrobenzene. Aniline, Phenol, Benzoic Acid (from Toluene). Iodobenzene, Salicylic acid, Azo-dye, etc.

At the practical examination, candidates must submit to the Examiner or Examiners their laboratory note books (duly certified by their professors or lecturers) as a *bona fide* record of work done by the candidates.

TEXT-BOOKS.

• 1938 and 1939.

Books for Study—

Partington: Text-book of Inorganic Chemistry (Macmillan).

Mellor: Modern Inorganic Chemistry (Longmans).

Caven and Lander: Systematic Inorganic Chemistry (Blackie).

Senter: Outlines of Physical Chemistry (Methuen).

Lowry and Sugden's Physical Chemistry (Macmillan).

Caven: Systematic Qualitative Analysis (Blackie).

Caven: Quantitative Chemical Analysis, Parts 1 and 2 (Blackie).

Thorpe: Inorganic Chemical Preparations (Ginn).

Cohen: Practical Organic Chemistry for Advanced Students (Macmillan).

Taylor: Practical Physical Chemistry (O. U. P.)

Perkin and Kipping: Organic Chemistry (Chambers).

Moreau: Fundamental Principles of Organic Chemistry (Bell).

Coward and Perkins: Exercises in Chemical Calculations (Arnold).

Lowry: Text-book of Inorganic Chemistry (Macmillan).

Coleman and Arnall's Preparation and Analysis of Organic Compounds (Churchill).

Reference—

Walker: Introduction to Physical Chemistry (Macmillan).

Russell: Chemistry of Radio-active Substances (Murray).

Read's Text-books of Organic Chemistry (G. Bell & Sons).

Thorpe's History of Chemistry, 2 Volumes, (Watts).

Holleman's Text-book of Organic Chemistry (Wiley).

Botany, Zoology, Geology and Physiology.

In the parts covered by both syllabuses (of any one subject) the knowledge required for the examination in the subsidiary shall be less detailed than that in the main subject.

(ii-d) Botany—Main.

1. The main points of structure, development, life-history and the taxonomic relation of the following groups in general and the genera in particular:—

Bacteria.

Cyanophyceae.

Oscillaria, Nostoc, Rivularia.

Chlorophyceae.

Chlamydomonas, Pandorina, Eudorina, Pleodorina, Volvox, Ulothrix, Oedogonium, Enteromorpha, Pleurococcus, Cladophora, Vaucheria, Caulerpa, Spirogyra, Desmids, Chara or Nitella, Diatoms.

Phaeophyceae.

Ectocarpus, Fucus, Dictyota.

Rhodophyceae.

Batrachospermum, Polysiphonia, Gracilaria.

Phycomycetes.

Phytophthora, Saprolegnia, Mucor or Rhizopus.

Ascomycetes.

Erysiphe, Peziza, Saccharomyces.

Basidiomycetes.

Ustilago, Puccinia, Agaricus, Polyporus.

Lichens.

Bryophytes.

Riccia, Fimbriaria, Anthoceros and any one Moss.

Pteridophytes.

Any one Polystelic Fern, *Marsilia, Lycopodium* and
Selaginella.

Gymnosperms.

Pinus, Cycas.

2. The external morphology of Flowering Plants.

3. The general principles of classification and the distinguishing characteristics of the following Natural Orders as used in the Flora of British India:—

Anonaceae.	Sapindaceae.
Nymphaeaceae.	Anacardiaceae.
Capparidaceae.	Papilionaceae.
Guttiferae.	Caesalpiniaceae.
Malvaceae.	Minosae.
Sterculiaceae.	Rosaceae.
Geraniaceae.	Combretaceae.
Rutaceae.	Myrtaceae.
Meliaceae.	Lythraceae.
Rhamnaceae.	Cucurbitaceae.

Umbelliferae.	Amarantaceae.
Rubiaceae.	Loranthaceae.
Compositae.	Euphorbiaceae.
Sapotaceae.	Urticaceae.
Apocynaceae.	Lauraceae.
Asclepiadaceae.	Orchidaceae.
Boraginaceae.	Scitamineae.
Convolvulaceae.	Amaryllidaceae.
Solanaceae.	Liliaceae.
Scrophulariaceae.	Commelinaceae.
Acanthaceae.	Palmae.
Labiatae.	Araceae.
Verbenaceae.	Cyperaceae.
	Gramineae.

4. Plant Physiology:—

The chemical composition of the plant. Materials of plant food and their sources. The nature of soil and importance of its constituents and of micro-organisms. Movements of water and gases. Assimilation of carbon and nitrogen. Transpiration and translocation of the assimilated products. Metabolism. Parasitism and other special modes of nutrition. Respiration. The influence of light, heat and gravity. Growth, movements and irritability in plants. Sexual reproduction and its significance. Vegetative reproduction. The phenomena of cross-fertilization. Variation, Heredity and Mendelism. Theories of Evolution and Origin of Species.

5. Histology:—

The structure and modes of division of the cell, and the nature of its contents. The nature and mode of origin of plastids, cell-sap and other cell-contents. The physical and chemical properties of protoplasm and cell-wall. The origin, nature and development of plant tissues. Primary and secondary tissues and their distribution in the plant body.

6. Practical Work:—

Candidates are expected to be able to make preparations illustrating the form and structure of any plant of the Groups or Orders mentioned in the syllabus and to describe them with sketches sufficient for their identification; to make dissections

with the simple microscope of the floral parts of Phanerogams and to make drawings, construct floral diagrams and refer them to their Natural Orders; to describe in technical language plants belonging to any of the Orders or Groups specified in the syllabus.

At the practical examination each candidate must submit his laboratory note-books and a collection of named plants collected and preserved by himself.

Books for Reference.—

Coulter, Barnes and Cowles: Text-book of Botany, 3 Vols.

Ganong: Text-book of Plant Physiology.

Bower: The Living plant.

Strasburger: Text-book of Botany.

Ganong: A Text-book of Botany for Colleges, Parts I and II.

Smith, Overton and Gilbert: Text-book of General Botany.

(ii-e) Zoology—Main.

Theory.

I. *Invertebrata*.—The leading features in the structure, the development, the affinities and classification of the following groups:—

Protozoa -- Coelenterata — Platyhelminthes — Nemathelminthes (Nematoda)—Annelida (Chaetopoda and Hirudinea)—Arthropoda—Mollusca (Pelecypoda, Gastropoda and Cephalopoda)—Echinodermata.

II. *Chordata*.—The structure and the development of the vertebrate systems to be treated from an evolutionary stand point as illustrated by representative types such as Amphioxus, Shark, Teleost, Dipnoan, Newt, Frog, Lizard, Bird and Rabbit. A study of the primitive chordates as illustrated by Sea squirt and Balanoglossus will be expected.

An outline classification of the vertebrata and a general acquaintance with the vertebrate fauna of South India.

III. *Vertebrate Embryology*.—An elementary knowledge of the development of the chick.

IV. Outlines of the theories of Organic evolution and heredity.

Practical.

Candidates will be required to identify and describe specimens and preparations illustrating points of zoological interest

in connection with any of the groups mentioned above. They will also be required to make dissections and simple microscopic preparations of any of the following types:—

Earthworm: Nereis (external characters); Prawn (external characters); Cockroach; Scorpion; Fresh-water mussel; Ampullaria and Sepia (external characters); Shark; Frog; Pigeon; Rabbit or Hare. Candidates may also be required to identify and draw slides of developing Chick. Dissection of the nerves in the vertebrate types will not be required except in the case of the Shark and the Frog.

Books for Study—

1. Parker and Haswell: Text-book of Zoology—2 Vols. (Macmillan).
2. Shipley and MacBride: Text-book of Zoology—2 Vols. (Cambridge University Press).
3. Borradaile: Manual of Zoology (Oxford University Press).
4. Bourne (G. C.): Comparative Anatomy of Animals, 2 Vols. (George Bell & Sons).
5. Graham Kerr: Evolution (Macmillan).
6. De Beer: Vertebrate Morphology, (Sidgwick and Jackson).
7. Patten: Development of the Chick.
8. H. H. Wilder: History of the Human Body. (Henry Holt).
9. Adam's Introduction to Vertebrates, (Chapman and Hall).

Practical—

1. Marshall: The Frog. (Macmillan).
2. Marshall and Hurst: Practical Zoology (Smith Elder & Co.).
3. Lille's Laboratory Outline of Embryology (University of Chicago Press).

Reference—

1. Sedgwick (A): Student's Text-book of Zoology—3 Vols. (Swan Sonnenschein).
2. Lang (A): Text-book of Comparative Anatomy—2 Vols. (Macmillan).
3. Weidersheim: Elements of the Comparative Anatomy of Vertebrates (Macmillan).
4. Borradaile: Animal Life and its Environment (Henry Frowde and Hodder and Soughton).
5. Lull: Organic Evolution: (Macmillan).

6. Kingsley: Comparative Anatomy of Vertebrates. (George Bell & Sons).
7. H. Reynolds: Vertebrate Skeleton (C. U. P.).
8. Holmes: Biology of the Frog. (Macmillan).
9. De Beer: Vertebrate Morphology (Sidgwick and Jackson, Ltd.).
10. Wieman: An introduction to Vertebrate Embryology (McGraw Hill and Co.).
11. Hyman's Manual of Comparative Vertebrate Anatomy, (University of Chicago Press).

(ii-f) Geology—Main.

- I. Physiography.
- II. Mineralogy and Crystallography.
- III. Petrology.
- IV. Structural and Field Geology.
- V. Stratigraphy and Palæontology.

(i) Physiography.

An elementary course of lectures on the following:—

The earth as a planet, its general relations to the other members of the solar system, hypotheses as to the origin of the earth; form, size and density of the earth; its movements and their effects.

The Atmosphere—its composition, height, density; pressure, temperature, moisture and movements; weather, refraction, twilight, and aurora-borealis.

The Hydrosphere—its composition, extent and distribution, depth, temperature and movements.

The Lithosphere—the chief constituents of the earth's crust, the general characters and mode of occurrence of igneous and sedimentary rocks. Condition of the interior of the earth.

Agents of geological change.—The hypogene and epigene agents of geological change, manner and results of their action, especially as influencing earth-sculpture—the destruction, construction, and gradual evolution of the crust of the earth and of its surface features.

Fossils, the main conditions favourable for their formation and preservation and their value as interpreters of the past history of the earth.

Climates—their causes and distribution; glacial epochs.

Simple facts about the geographical and geological distribution of the chief types of plant and animal life. Antiquity of man. Views as to the age of the earth's crust.

(ii) Mineralogy and Crystallography.

Symmetry; lines, planes and axes of symmetry: laws of Crystallography; the common holohedral, hemihedral and hemimorphic crystal forms and combinations under each of the six crystal systems; the more important types of twins and twinning; drawing of the more important crystal forms; systems of crystal notation, use of the contact Goniometer.

The principal physical properties of minerals which aid in the recognition of the various mineral species.

Isomorphism, paramorphism, pseudomorphism and dimorphism.

The chief characteristics of all the more abundant minerals including both those which are of geological interest and those of commercial value, their modes of occurrence and uses.

The practical determination of the chief physical and chemical properties of the commoner ores and minerals, including the use of the blowpipe.

(iii) Petrology.

The classification and distribution of rocks, and the composition, structure, texture, origin and mode of occurrence of all the more important types and their metamorphic and altered forms.

Contact and Regional Metamorphism.

The macroscopic and microscopic examination of rocks including the determination of the simpler optical characters of the chief rock forming minerals in parallel polarized and convergent light. Preparation of diagrams or sketches to represent features observed in rock sections under the microscope. Construction and use of a simple petrological microscope.

(iv) Structural and Field Geology.

The more important lithological and structural features of rocks, their origin or formation; structure of mineral veins. Diagrammatic sketches of the above.

Construction and interpretation of geological maps and sections. Tracing of outcrops. Simple problems in Structural Geology.

(v) Stratigraphy and Palæontology.

The chief petrological and palæontological characters of the main geological divisions and their Indian representatives and the probable physical conditions under which they were formed. Geology of India.

Fossils, their nature and preservation. The main groups of vegetable and animal life and their distribution in time.

The characters, classification and distribution of the more important types of fossils—especially Indian; identification and sketching of fossils; causes for the imperfection of the geological record; the general succession of life as revealed thereby and the general evidence furnished in support of evolution; principles of correlation; Homotaxis.

(vi) Practical Examination.

The knowledge of the candidate in accordance with the syllabus will be tested also by practical examination. *Viva voce* questions may be asked, acquaintance with field work is necessary.

Books for Study—

Judd: Students' Lyell.

Williams: Crystallography.

F. Rutley: Mineralogy.

A. Gelkie: Class-book of Geology.

Hatch and Wells: Petrology (Igneous Rocks).

, Hatch & Rastall: Petrology (Sedimentary Rocks).

Harker: Petrology.

Wadia: Geology of India.

Woods: Invertebrate Palaeontology.

Reference Books—

Chamberlin & Salisbury: College Geology.

Lake & Rastall: Text-book of Geology.

(ii-g) Physiology—Main.

Will be prescribed later.

GROUP (ii).

Mathematics—Subsidiary.

Algebra and Trigonometry.—Simple practical applications of the binomial, exponential, and logarithmic series, compound interest law.

Complex numbers, their geometrical representation; de Moivre's theorem and its immediate applications. Use of the expansion of the sine and of the cosine in power series,

Hyperbolic functions.

Analytical Geometry.—As for B.A. (main standard) excluding the general equation of the second degree and polar equations.

Calculus.—The same as for B.A. (main standard).

In each of these two subjects (Algebra and Trigonometry, and Calculus) candidates will be expected to show familiarity with the graphs of the principal functions occurring in Physics and Chemistry.

The problems set for the subsidiary papers will, in general, be of a lower standard than for the main papers in the same subjects and will as far as possible relate to scientific topics.

Physics—Subsidiary.

Properties of Matter.—

Compressibility of gases at high and low pressure. Diffusion of liquids. Osmosis. Experimental study of viscosity. Pressure of a gas, and its explanation on the kinetic theory. Avogadro's hypothesis; Van der Waal's equation.

Hydrostatics.—

Pumps, pressure gauges and hydrostatic machines. Capillary phenomena and their explanation by surface tension.

Heat.—

Expansion, calorimetry and thermometry. Vapour pressure; critical temperature and pressure. Conduction of heat and determination of conductivity. Radiation and absorption; laws of cooling. Theory of exchanges; methods of measuring radiation. Mechanical equivalent of heat. Carnot's theorem; absolute scale of temperature.

Light.—

Velocity of light; explanation of reflection and refraction of plane waves on plane surfaces by the wave theory. Colours of thin films; Newton's rings. Plane transmission gratings and determination of wave length at normal incidence. Spectrum analysis. Plane polarised light; the saccharimeter.

Electricity.—

Wheatstone's bridge: specific resistance; resistance thermometers. Conductivity of electrolytes; ionization, and migration phenomena. Accumulators and standard cells. The potentiometer system of measurement. Thermo electric phenomena. Electro magnetic induction. Induction coils. Elements of experimental wireless and X-rays.

Magnetism.—

Determination of the axis and moment of a magnet.
Determination of field strength. Magnetic induction in iron, etc.
Theory of magnetism.

The magnetic field of the earth; the magnetic elements and their determination.

TEXT-BOOKS.

1938 and 1939.

C. J. Smith: Intermediate Physics.

Chemistry—Subsidiary.

I. *General Chemistry.*—

Atomic Theory.

Methods of determining Equivalent, Atomic weight (including at least one classical method), Molecular weights (vapour density methods) and Valency.

Vapour pressure of solutions; Osmotic pressure; Molecular weights in solution. Heats of solution and neutralisation.

Electrolytic Dissociation; Conductivity.

Law of Mass action (homogeneous systems only); Velocity of reactions.

II. *Inorganic Chemistry.*—

(a) Periodic Classification and the Periodic Table.

(b) Preparation (laboratory methods and brief outlines of industrial methods), properties and uses of Hydrogen, Oxygen, the Halogens, Sulphur, Nitrogen, Phosphorus, Arsenic, Carbon, Silicon, Boron and their important compounds.

(c) Sources, extraction, properties and uses of Sodium, Potassium, Copper, Silver, Gold; Calcium, Strontium, Barium, Magnesium; Zinc, Cadmium, Mercury; Aluminium, Tin, Lead; Antimony, Bismuth; Chromium, Manganese, Iron, Cobalt, Nickel and their most common compounds studied from the periodic standpoint.

III. Organic Chemistry.—

Purification of organic compounds, Qualitative and Quantitative Analysis, Isomerism, Polymerism.

Methane, ethylene, acetylene, methylhalides, methyl alcohol, ethyl alcohol, ether, acetaldehyde, acetone, acetic acid, ethyl acetate, acetamide, oxalic acid, glycerine, amines, fats, oils and soaps.

Benzene, nitrobenzene, aniline, diazotisation, phenol, toluene, benzyl alcohol; benzaldehyde, benzoic acid.

IV.—Practical Chemistry.—Qualitative analysis of inorganic substances containing not more than one acid and one base. Simple volumetric analysis with standard solutions of acids, alkalis, potassium permanganate, iodine and sodium thio-sulphate.

Note.—The paper in General and Inorganic Chemistry will consist of two parts, Part A on General Chemistry and Part B on Inorganic Chemistry. Usually two questions are to be answered out of three questions set in Part A, and four questions out of five in Part B.

TEXT-BOOKS.

1938 and 1939.

Books for Study—

Smith: Introduction to Inorganic Chemistry (Bell).

Senter: Outlines of Physical Chemistry (Methuen).

Thorpe: History of Chemistry, 2 Volumes (Watts).

Caven: A short system of Qualitative Analysis.

Caven: Quantitative Chemical Analysis Part I, (Blackie).

Thorpe: Inorganic Chemical Preparations (Ginn).

Text-book of Physical Chemistry by J. B. Firth (University Tutorial Press).

Rane and Varma's Elements of Organic Chemistry, published by Nand Kishore & Bros., Benares.

Reference—

Partington: Text-book of Inorganic Chemistry (Macmillan).

Lowry: Historical Introduction to Chemistry (Macmillan).

Holmyard: Introduction to Organic Chemistry (Arnold).

Botany—Subsidiary.

- (1) The structure and life-history of the following:—

Bacteria, *Oscillaria*, *Nostoc*, *Chlamydomonas*, *Pandorina*, *Eudorina*, *Pleodorina*, *Volvox*, *Ulothrix*, *Oedogonium*, *Spirogyra*, *Ectocarpus*, *Polysiphonia*, *Chara* or *Nitella*, *Rhizopus*, *Puccinia*, *Agaricus*, Lichens, *Riccia*, any one Moss, *Selaginella*, any one Polystelic Fern, *Cycas*, *Pine*.

- (2) External Morphology of Flowering Plants.

- (3) The general principles of classification and the characteristics of the following Natural Orders:—

Anonaceae, Nymphaeaceae, Leguminosae, Malvaceae, Rutaceae, Myrtaceae, Cucurbitaceae, Rubiaceae, Compositae, Apocynaceae, Asclepiadaceae, Convolvulaceae, Solanaceae, Acanthaceae, Labiatae, Amarantaceae, Euphorbiaceae, *Urticaceae*, Liliaceae, Amaryllidaceae, Scitamineae, Orchidaceae, Palmae, Cyperaceae, Gramineae.

- (4) Plant Physiology:—

Chemical composition of the plant. Soil and its nature, Photo-synthesis, Transpiration, Respiration, Metabolism, Heterotrophic Plants, Growth, Movements, Irritability, Reproduction, Cross and Self Fertilization, Variation, Heredity and Mendelism. Theories of Evolution and the Origin of Species.

- (5) Histology:—

Cell-structure and cell-division, plastids, cell-sap, other cell-contents, the origin, nature and development of plant-tissues. Primary and secondary tissues and their distribution in the plant-body.

Note.—The Practical Examination will be of three hours' duration.

Zoology—Subsidiary.

Theory.

1. *Invertebrata*.—The leading features in the structure, the development, the affinities and the classification (not lower than orders) of the following groups:—

Protozoa, Coelenterata, Platyhelminthes (Trematoda, and Cestoda), Nemathelminthes (Nematoda), Annelida (Chaetopoda, and Hirudinea), Arthropoda, Mollusca, (Pelecypoda, Gastropoda, and Cephalopoda) and Echinodermata.

2. *Chordata*.—The structure and the development of the vertebrate systems to be treated from an evolutionary standpoint as illustrated by representative types such as Amphioxus, Shark, Teleost, Dipnoan, Newt, Frog, Lizard, Bird and Rabbit.

The treatment of the types will be less exhaustive than for the main.

3. An elementary knowledge of the theories of organic evolution.

Practical.

Candidates will be required to identify and describe specimens and preparations illustrating points of zoological interest in connection with any of the groups mentioned above. They will also be required to make dissections and simple microscopic preparations of any of the following types:—

Earthworm; Nereis (external characters); Prawn (external characters); Cockroach; fresh water mussel (nerves excepted); Pila (external characters); Sepia (external characters); Shark; Frog; Pigeon; Rabbit or Hare; (Dissection of the nerves in the Vertebrate types will not be required except in the case of the frog).

Books for Study—

Theory—

1. Shipley and MacBride: Text-book of Zoology (Cambridge University Press):
2. Borradaile: Manual of Zoology (Oxford University Press).
3. Kerr: Organic Evolution (Macmillan).
4. College Zoology: Hegner—Macmillan & Co., New York.

Practical—

1. Marshall: The Frog (Macmillan).
2. Marshall and Hurst: Practical Zoology (Smith Elder & Co.).

Reference—

1. Lull: Organic Evolution (Macmillan).
2. Metcalfe: Evolution.
3. Parker and Haswell: Text-book of Zoology (Macmillan).

Geology—Subsidiary.

Mineralogy.—The more important rock-forming minerals, their composition and general physical characters and their characteristic alteration products. An elementary knowledge of crystallography is expected.

Petrology.—Origin, classification and the distinctive characters of the leading types of sedimentary, igneous and metamorphic rocks.

Physical Geology.—The general nature and relation of the main agents of geological change, epigene and hypogene; and their action.

Structural Geology.—Elementary knowledge of rock-structures, stratification, dip, strike, outcrop, outlier, inlier, folds; faults, cleavage, joints, unconformity and overlap; surface-features as influenced by the nature and disposition of the rocks; water supply.

Stratigraphical Geology.—Rocks as embodying the history of the earth; fossils, their mode of formation and value in Geology and also in the biological sciences; the order of superposition; the geological record; its general conclusions relating to former changes in the physical features of the earth and also in the character of the organic forms; the order of succession of plant and animal life on the surface of the globe; the theory of evolution; an elementary knowledge of Indian Geology is required.

The practical examination may include the interpretation of maps and tectonic models and drawing of sections across them, of representations of scenery and also the identification and description of the more important types of minerals, rocks and fossils including models.

Candidates will be expected to show some acquaintance with field work.

Books for Study—

C. Lapworth: Intermediate Text-book of Geology.

A. Geikie: Class-book of Geology.

Pirsson: Introduction to Geology.

Pirsson: Rocks and Rock Minerals.

Physiology—Subsidiary.*

Histology of the tissues. Foods: digestion. Absorption. Respiration. Blood and Lymph. Circulation. Excretion. Metabolism. Internal secretion. Neuro-muscular system. The special sense organs. Reproduction.

*This Syllabus will be in force till (including) the Examinations of 1938. The revised Syllabus will take effect from the Examination of March 1939.

Practical.—Candidates will be expected to do simple experiments on nerve-muscle physiology, on the heart-beat, on the composition of foods, of urine and of the blood. They may also be required to identify microscopical preparations of tissues (not of organs).

Books for Study for B.A. & B.Sc. Degree Examinations—

1. Bainbridge and Menzies: Essentials of Physiology (Longmans).
2. Bodansky: Introduction to Physiological Chemistry (Wiley).
3. Lewis and Bremer: Text-book of Histology. (Blakiston).
4. Parsons: Fundamentals of Bio-chemistry. (Heffer).

Books for Reference—

1. Starling: Principles of Human Physiology (Churchill).
2. Macleod: Physiology and Bio-chemistry in Modern Medicine (Mosby).
3. Evan: Recent Advances in Physiology (Heffer).
4. Pryde: Recent Advances in Bio-chemistry. (Heffer).
5. Mathews: Physiological Chemistry. (Wood).
6. Aurep and Harris: Practical Physiology (Churchill).
7. Cannon: A laboratory course in Physiology (Harvard Univ.)
8. Folin: Laboratory Manual of Biological Chemistry (Appleton).
9. Schafer: Experimental Physiology. (Longmans).

**Revised Syllabus in Physiology (Subsidiary) for B.A.,
B.Sc. (Pass) and B.Sc. (Honours)
Degree Examinations.***

A knowledge of the essential facts of the structure and functions of the body as indicated below:—

The animal cell—properties of living protoplasm—histology of the tissues and the principal organs of the body.

Circulation:—Structure of the heart—the cardiac cycle and the events during the cycle—causation of the heart-beat—properties of cardiac muscle—innervation and regulation of the heart-beat.

**Note:*—The above Syllabus will come into force from the Academic year 1937-38, i.e., from the Examinations of March 1939.

Course of the circulation of blood—blood pressure—velocity of blood—pulse—flow of blood in capillaries and veins—vasomotor nerves.

Blood:—Composition of blood and its functions—the blood corpuscles—haemoglobin—haemolysis—coagulation of blood.

Lymph:—Formation, circulation and functions.

Spleen:—Structure and functions.

Respiration:—The respiratory mechanism—volume of air breathed in—blood gases—gaseous exchange in the lungs and tissues—composition of expired and alveolar air—regulation of respiration—*asphyxia*.

Nutrition:—Composition of the common food substances, *viz.*, milk, eggs, bread, rice, meat, etc.—secretion and properties of the digestive juices and bile—movements of the stomach and intestines, absorption of food.

Essential facts of protein, carbo-hydrate, and fat metabolism—basal metabolism—nitrogen balance.

Requirements of normal diet.

The body temperature and its maintenance.

Excretion:—Composition and secretion of urine—micturition.

Skin—its structure and functions.

Endocrine organs:—An elementary knowledge of the more important internal secretions.

Neuro-muscular system:—Structure and properties of muscle—physical and chemical changes during contraction—fatigue—structure and functions of nerve-fibres. The general structure of the different parts of the central nervous system—reflex action—sensations and their nerve-paths—mechanism of voluntary movements and their co-ordination—a general account of sense organs.

Practical:—Candidates are expected to perform simple experiments on the nerve-muscle preparation, the spinal frog, and the frog's heart. They should know how to measure respiratory volumes and blood pressure and be able to make simple qualitative tests on proteins, fats and carbo-hydrates, milk, urine, and to identify microscopic preparations of tissues and the more important organs.

Books for study:—

1. Halliburton and McDowall : Handbook of Physiology (John Murray).
2. Bainbridge and Menzies : Essentials of Physiology (Longmans).

3. Bremer: Text-book of Histology (Blakiston).
4. Schaefer: Experimental Physiology (Longmans).
5. Halliburton, Hewitt and Robson: Essentials of Chemical Physiology.
6. Parsons: Fundamentals of Biochemistry (Heffer).

For reference:—

1. Howell: Text-book of Physiology (Saunders).
2. Starling's Principles of Human Physiology (Churchill).
3. Evans: Recent Advances in Physiology (Churchill).
4. Pryde: Recent Advances in Biochemistry (Churchill).
5. Harris: Experimental Physiology (Churchill).
6. Schaefer: Essentials of Histology (Longmans).
7. Bodanski: Introduction to Physiological Chemistry (Wiley).
8. Cole: Practical Physiological Chemistry (Heffer).

Mechanical Engineering.

As a Subsidiary subject only to Physics.

Graphics, Machine Drawing and Strength of Materials:—
More advanced than for the Intermediate with the following additions:—

Geometrical Drawing—Simple interpenetration of solids. Elementary notions of perspective. Strength of Materials—Gordon's, Rankine's and Euler's formulæ.

*Heat Engines:—*More advanced than for the Intermediate.

*Steam-tables:—*Expansive working of steam. Indicated horse power. The Indicator and Indicator diagrams. Mechanical efficiency. Entropy.

*Steam Engines:—*Modern types of land, marine and locomotive engines; uniflow engines; steam turbines, their description and working.

*Internal Combustion Engines:—*Modern engines. Modern engine cycles and their applications. Types of engines with reference to available fuels, such as petrol, kerosine, crude oil, gas, (suction and pressure).

*Fuels:—*Characteristic properties of common fuels—coal, charcoal, wood and oils. Calorific values.

Boilers:—Description and working of common types of boilers and their accessories.

Materials:—Same as for Intermediate but more detailed.

Connections:—Same as for the Intermediate but more advanced. Efficiency of simple types of riveted joints. Treatment of 3 or 4 overlapping plates. Connection of plates with angle and T irons. Flange joints. Different forms of screw threads. Cotter fastenings.

Shafts and bearings:—Shafts and shaft couplings. Clutches, Universal joints. Bearings for horizontal and vertical shafts. Ball and roller bearings. Methods of lubrication.

Belt and toothed gearing:—Same as for Intermediate but more advanced. Worm and helical gearing.

Engine Details:—Usual forms of cranks and levers. Methods of fixing crank pins. Forms of eccentric. Ordinary arrangements of connecting rods, Cross heads and coupling rods. Forms of cylinders, flanges and covers. Simple forms of pistons. Attachment of piston rods. Simple forms of stuffing box and gland. Construction of simple slide valve.

Pumps:—Types of pumps—reciprocating and rotary. Relative advantages and applications.

PRACTICAL WORK.

The following indicates broadly the scope of the practical work.

1. More advanced exercises in wood work, forging, soldering, casting, fitting and wood and metal turning, specially with reference to scientific instruments.

2. Finding calorific values of solid, liquid and gaseous fuels.

3. Viscosity of lubricating oils by Viscometer.

4. Determination of flash points of common fuel oils.

5. Testing of engines.

(a) Taking indicator diagrams and determination of I.H.P. and B.H.P. and calculation of mechanical efficiency.

(b) Testing for fuel consumption per B.H.P. hour.

(c) Finding heat efficiency.

Note:—At least two hours a week should be devoted to practical work.

Books for Study—

1938 and 1939.

Applied Mechanics—Mechanics applied to Engineering by
Goodman, Longman's Green & Co.

Machine Drawing and Design by Low and Bevis.

Steam and other Engines by Duncan.

Heat Engines by Moorfield and Winstonley.

Electrical Engineering.

As a Subsidiary subject only to Physics.

1. *General principles*:—More advanced course than for the Intermediate with the following additions:—

Magnetism curves of iron and steel. Calculation of Ampere turns in magnetic circuits of D. C. machines. Eddy currents. Hysteresis. Armature reaction. Capacity.

2. *Measurements*:—In addition to that for the Intermediate, frequency meters, power factor meters, and 3 phase wattmeters.

3. *Generators*:—Continuous current generators, alternators and synchronising alternators, transformers; their characteristics and methods of testing efficiency and voltage regulation. Transformers and their uses and connections. Paralleling of generators and transformers.

4. *Motors*:—Continuous current motors, synchronous and induction motors, their characteristics and uses; methods of starting. Principle of working of a rotary converter.

5. *Batteries*:—Secondary batteries and their practical applications.

6. *Power Distribution*:—Methods of distributing electric power in streets; overhead and underground mains; D. C. three wire system. A. C. three phase four wire system. Calculation of conductor sizes. Properties of insulation materials.

7. *Illumination*:—Candle power; polar curves. Use of shades and reflectors.

8. Design and management of a small house lighting power plant with storage battery.

The magneto. Any one type of an automobile lighting system.

LABORATORY COURSE.

The following indicates broadly the scope of the practical work.

Same tests as for the Intermediate with insistence on greater accuracy of results, with the following additions:—

Direct Current:—

1. Calibration of ammeter against a standard instrument.
2. Calibration of a voltmeter against a standard cell with a dial type of potentiometer.
3. Measurement of hysteresis by Ewing's hysteresis tester.
4. Shunt motor. Approximate predetermination of efficiency of shunt motor at varying load currents by measurement of power taken at no load.
5. Series Motor (a) speed characteristic, (b) efficiency by a brake test.
6. Compound wound motor, (a) reversal of compound wound motors additive and differentially compounded, (b) speed characteristic, additive compound, (c) speed characteristic differentially compounded, (d) efficiency of a compound wound motor by a brake test.
7. Generators (a) separation of iron, friction and copper losses of a generator at full load (b) calculation of efficiency from losses, (c) approximate efficiency of a shunt generator by measurement of power taken when run as a motor on no load. (d) excitation characteristic of generator, (e) parallelling of 2 shunt generators and verification of sharing of load according to their separate characteristics.
8. Compound wound generators:—(a) load characteristic separately excited additive compound.
 (b) load characteristic, self excited additive compound.
9. Operation of a simple electric lighting plant with charging dynamo and regulating battery.

Alternating Current:—

10. Comparison of capacity against a standard.
11. Measurement of capacity from voltage applied, frequency and resulting current.
12. Measurement of impedance (involving also capacity).
13. Efficiency of a 3 phase alternator by measurement of iron, friction and copper losses.
14. Alternators—
 - (a) Load characteristic of a 3 phase alternator with non-inductive load.
 - (b) Effect of unbalanced load.
 - (c) Parallelling of single and 3 phase alternators; synchronising by lamps; distribution of load between alternators.

15. Synchronous motors—

- (a) Efficiency by brake test.
- (b) Effect on power factor for a particular load when over and under excited.

16. Transformers:—

- (a) Efficiency of single phase transformers from losses.
- (b) Star and delta connections of transformers. Paralleling of single phase transformers.
- (c) Efficiency and voltage regulation of transformers, connected 3 phase by actual loading and by watt-meter measurements on the primary and the secondary sides.

17. Measurement of power:—

- (a) By two watt-meter method.
- (b) Measurement of power factor in a 3 phase circuit.

18. Induction motor. 3 phase squirrel cage and slip ring types.

- (a) Speed variation on load. Approximate slip.
- (b) Efficiency from brake test.
- (c) Power factor improvement on load.
- (d) Effect on power factor with resistance in motor circuit.

19. Calibration of a 3 phase watt hour meter against watt-meters and standard clock.

20. Illumination—Polar curves of incandescent lamps.

21. The running of a simple electric generating plant, comprising of an engine, dynamo and storage battery.

Note:—At least two hours a week should be devoted to the laboratory course.

Books for Study—

Elementary Electrical Engineering.—Clayton and Shelley. Longmans, Green & Co., London.

Electrical Engineering—Gray—Mc Graw Hill Publishing Co., London.

GROUP (III)—PHILOSOPHY.

1938.

Psychology.—

Woodworth's *Psychology* (Tenth Edition—1935).

Ethics.—

Muirhead's *Elements of Ethics*.

Logic and Theory of Knowledge.—

Essentials of Logic by Bosanquet (first four lectures).

An Introductory Logic—Creighton and Smart (Part III).

Indian Logic.—

Tarkasaṅgraha of Annambhaṭṭa Sections 28-42, beginning with "buddhi" and ending with "smṛti".

Indian Philosophical Classic.—

The Sāṅkhya-Kārikā of Īśvara-kṛṣṇa.

European Philosophical Classic.—

Hume's *Inquiry into the Human Understanding* (omitting the Chapter on Miracles).

1939.

Psychology.—

Woodworth's *Psychology* (Tenth Edition—1935).

Ethics.—

Muirhead's *Elements of Ethics*.

Logic and Theory of Knowledge.—

Essentials of Logic by Bosanquet (first four lectures).

An Introductory Logic—Creighton and Smart (Part III).

Indian Logic.—

Tarkasaṅgraha of Annambhaṭṭa (as for 1938—Sections 28-42, beginning with "buddhi" and ending with "smṛti").

Indian Philosophical Classic.—

The Sāṅkhya-Kārika of Īśvara-kṛṣṇa.

European Philosophical Classic.—

Leibniz: *Monadology*.

1940.

Psychology.—Woodworth's *Psychology* (Tenth Edition—1935).*Ethics.*—Muirhead's *Elements of Ethics*.*Logic and Theory of Knowledge.*—*Essentials of Logic* by Bosanquet (first four lectures).*An Introductory Logic*—Creighton and Smart (Part III).*Indian Logic.*—*Tarkasaṅgraha* of Annambhaṭṭa (Sections 28-42, beginning with "buddhi" and ending with "smṛti").*Indian Philosophical Classic.*—*Saptapadārthī*.*European Philosophical Classic.*—Descartes' *Meditations*.

1941.

Psychology.—Woodworth's *Psychology* (Tenth Edition—1935).*Ethics.*—Muirhead's *Elements of Ethics*.*Logic and Theory of Knowledge.*—*Essentials of Logic* by Bosanquet (first four lectures).*An Introductory Logic*—Creighton and Smart (Part III)*Indian Logic.*—*Tarkasaṅgraha* of Annambhaṭṭa (Sections 28-42, beginning with "buddhi" and ending with "smṛti").*Indian Philosophical Classic.*—*Saptapadārthī*.*European Philosophical Classic.*—Berkeley's *Principles of Human Knowledge*.

GROUP (IV-A)—HISTORY AND ECONOMICS

GENERAL INDIAN HISTORY.

Syllabus.

GROUPS (iv-a) AND (iv-b).

Introductory.—Historical Geography of India, Greater India—Sources of Indian History.

Divisions of the Subject:—

Introductory: Pre-historic.

(1) Early Period 600 B.C. to 650 A.D.

(2) Mediæval 650 A.D. to 1500 A.D.

(3) Modern from 1500 A.D.

Introductory: Pre-historic—The stone and the copper ages—Stages of evolution—Indus Valley culture and its general relation to (a) Sumerian (b) Tamil and (c) Vedic cultures. Vedic Literature, Religion and Polity. Dravidian India—Aryanisation of India—Its nature and extent.

I. Early period.—600 B.C. to 650 A.D.

(a) 600 B.C. to 350 B.C. The rise of Magadha—Persian Invasion and rule in the North-West. Tribal Republics—Religious and Philosophical growth—Jainism and Buddhism. Literature—Economic and Social Life—Alexander's invasion.

(b) i. 350 B.C. to 300 A.D.—The Mauryan Empire—Its administrative system—The Sungas and Kanvas—The Satavahanas—Kharavela—Language and scripts, Literature and Inscriptions—Art and Architecture—Economic conditions.

ii. *Foreign contacts.*—Indo-Greek Kingdoms—The Sakas—The Pallavas and the Kushans—The Kshatrapas—Coins—Gandhara Art—Mahayana Buddhism—Other religions—Vaishnavism and Saivism.

iii. *South India.*—Early Tamil Literature of the Sangam—Political, Social and Religious conditions—Classical writers—Roman trade—Colonisation of the Malay Archipelago and Indo-Chinese Peninsula.

(c) 300 A.D. to 650 A.D. (i) *Northern India.*—The Guptas—Harshavardhana—History of Sanskrit Language and Literature—The religious, economic and social conditions—Foreign travellers—Art and Architecture.

ii. *Deccan and South India*.—Political condition of the Deccan in this period—The early Pallavas—Revival of Hinduism in the South.

II. (a) 650 A.D. to 1200 A.D.

Northern India.—The Rajputs—The Pratiharas of Kanauj—The Chandelas of Bundelkhand—The Paramaras of Malwa—The Palas and Senas of Bengal.

The part played by Nepal, Kashmir and Assam in the diffusion of Indian culture.

Rise and expansion of Islam—Muslim rule in Sindh—Ghazni and Ghor—The Muslim conquest of Northern India.

Deccan.—The Chalukyas of Badami—The Rashtrakutas—The Chalukyas of Kalyani and Vengi—Kanarese and Telugu Literature and Culture—Religion—Art.

South India.—The Great Pallavas and Pandyas—The Imperial Cholas—Government—Religion, Art, Literature—Tamil expansion.

(b) 1200 A.D. to 1500 A.D.

Northern India.—The Sultanate of Delhi—The four dynasties—The Administrative system—The Hindu and Muhammadan contact—Religious reformers—Art, Architecture, Language and Literature.

Deccan and South India.—(a) 1200 A.D. to 1335 A.D. Yadavas of Devagiri, Kakatiyas of Warrangal—The Hoysalas of Dwara-samudra—Hoysala Art—The later Cholas and Pandyas—The Muhammadan conquest.

(b) 1335 A.D. to 1500 A.D. (1) The Bhamani kingdom, Government, Society. (2) The Vijayanagar kingdom to the accession of Krishna Raya—Relations with Islamic States—Literature and Religion.

III. *The Modern Period*.—

i. *Moghul India* (a) The Moghuls—Northern India on the eve of the Moghul conquest (Social, Economic, Religious and Political conditions), Baber, Humayun, Sher Shah—His administration—Return of the Moghul.

The Moghul Empire from Akbar to Aurangzeb—The Moghul administrative system—The organisation of the army—The Social, Economic and Religious conditions—Foreign travellers—Architecture, Painting, Music and the growth of Literature, Hindi and Persian,

(b) *Deccan*.—

(1) The Deccan Sultanates.

(2) Later Vijayanagar and the Naik kingdoms of Madura and Tanjore. Mysore.

(c) The advent of the European nations and their settlements—The Portuguese power—The Dutch, English and French rivalry.

(d) The rise of the Sikhs—Sikhism as a religious and political system—The rise of the Mahrattas—Sivaji—Mahratta Empire 1680—1761.

ii. *The East India Company 1600 A.D. to 1858 A.D.*—The growth of the British Dominion in India—The French and the English rivalry in India—The establishment of the supremacy of the English in South India.

The British occupation of Bengal—The growth of British power from Warren Hastings to Lord Dalhousie (Mysore and Mahratta wars).

Internal History.—Administrative and Social Reforms—Land Revenue Policy—The Political, Social and Economic conditions of India on the eve of the Indian Mutiny. The causes and the effects.

iii. *India under the Crown from 1858 A.D.*—Foreign policy—Influence of European politics on the British Indian administration—N.W. Frontier Policy—British Commercial expansion—Conquest of Burma.

Internal History.—The administrative policy of the Crown. Its growth—Political, Social and Economic conditions of India in the 19th Century—Impact of Western Education and thought on Indian life—Birth of Indian Nationalism—The administration of the Indian states and their relations with the paramount power.

Growth of representative institutions—Effects of the war—Constitutional Reforms of 1919.

Books—Indian History—B.A. (Pass).

V. A. Smith—Oxford History of India.

For consultation only.

Coomaraswami—Indian and Indonesian Art.

Elphinstone—History of India.

**414 SYLL. IN ENGLISH CONSTITUTIONAL HISTORY [APP.
FOR B.A. DEGREE EXAMINATION.**

Roberts—Historical Geography of the British Dominions—
Parts I and II.

Garret and Edwards—Muhammadian India.

Ilbert—Government of India.

The Cambridge Shorter History of India by Dodwell and
others.

ENGLISH CONSTITUTIONAL HISTORY FROM 1485.

**Syllabus.*

I. Introductory—Brief sketch of the position and powers of
the King, the Council and the Parliament at the end of the 15th
century.

II. The Tudor dynasty—claims of Henry VII to the throne—
measures to strengthen the monarchy.

Henry VIII—Relations with Parliament—The English Reform-
ation—its political nature and constitutional results—Progress
of the Reformation under Edward VI and Mary.

The Elizabethan Church settlement, its importance, progress
of the constitution under the Tudors—Tudor age, an age of
Government by Councils.

The importance of the Privy Council in the 16th century.

Tudor local administration—The Justices of the Peace—
Position of England at home and abroad at the close of the
period.

III. The 17th century—Crown *versus* Parliament; prerogative,
law, religion, domestic policy, foreign policy—blending of issues
throughout the period—Relations between the Parliaments and
the first two Stuarts—The Petition of Right—Personal rule of
Charles—the work of the Long Parliament.

England under a written constitution—The constitutional
experiments of the Commonwealth—Lessons of the Common-
wealth—Restoration, how inevitable.

The Restoration—really a revolution—Progress of Parliament
during the period. Exclusion bill, beginnings of parties. The
Royalist restoration towards the close of the reign of Charles.

*Three questions will be set on the portion covered by
Section I, of which one question will be compulsory, and seven
questions will be set on the rest of the subject, of which four
will be compulsory.

The period of the second Stuart absolutism—1685-1688.

Circumstances leading to the revolution—The peculiar nature of the revolution of 1688, comparison with the events of 1642. Work of the Revolution Parliament—Importance of the reign of William III and Mary—Influence of continental affairs on English politics during the period—Act of Settlement—Settlement of the fundamental question of sovereignty.

Progress of the constitution under the first two Georges—The Government of the Whig oligarchy—Development of the Cabinet—George III and the constitution—Efforts to arrest constitutional growth—How far successful—Break up of the Whig oligarchy—Dunning's resolution.

The Crown—The Cabinet System in the reign of George IV, William IV and Victoria—Gradual substitution of 'influence for power.' Movement towards Parliamentary reform—18th century movement and 19th century movement, contrast.

Reform Bills of 1832, 1867 and 1884, Representation of the Peoples Act of 1918—Act of 1926—position and problems of the Franchise at the present day.

Reorganisation of the Judiciary and local self-government in the 19th century, Reform of municipal corporations—Relations between the House of Commons and the House of Lords in the period.

Parliament Act of 1911—Its main provisions—Importance—Nationalisation of Royal revenues, civil list of the Crown, consolidated fund—History of the growth of the National army—The permanent civil service in relation to Parliament.

Development of Public rights—e.g., right to fair trial, right of association, right of meeting, right to free speech.

Books recommended—

(1) For Section I—Masterman—English Constitutional History.

(2) For the rest:—

Taswell-Langmead: English Constitutional History.

Marriott: English Political Institutions.

Maitland: A Constitutional History of England.

For Consultation—

Dicey: Law of the Constitution.

Ramsay Muir: How Britain is governed.

EUROPEAN HISTORY FROM 1500 A.D.

**Syllabus.*

I. Introduction—Brief account of the part played in European History by Islam, Feudalism, Empire, the Church and Eastern Empire—Europe at the close of the Middle Ages.

II. Advent of the Turks into Europe—Renaissance—Maritime discoveries—exploration and colonisation—decline of Venice and the Hanseatic League—Transfer of power to the Atlantic states—Rise of the national monarchies—France—England—Spain—France under Louis XI—The Christian Conquest of Spain—work of Ferdinand and Isabella—Reformation.

III. French invasion of Italy—Spain under the Hapsburgs—Charles V—France—Spanish rivalry—Charles V and Germany—Religious Questions—Philip II—The Spanish and the Austrian line of Hapsburgs—Philip's work in Spain—Battle of Lepanto—The Counter Reformation—Relations with the Netherlands—Recognition of Dutch independence—Philip II and France—Philip II and England—Decline of Spain.

The beginnings of Colonial rivalries among the Maritime powers.

Close of religious wars in France—Hegemony of France in the European state system—France under Henry IV—Richlieu and Mazarin—The Thirty Year's War—Treaties of Westphalia and Pyrennees—Louis XIV and Colbert—The Foreign policy of Louis XIV—War of the Spanish succession—Treaty of Utrecht—Rise and Decline of Sweden—Gustavus Adolphus and Charles XII—The struggle for the Baltic—Battle of Pultawa and the treaty of Nystadt—Peter the Great and rise of Russia—Turkish advance into Europe and siege of Vienna—Eastern policy of Russia—Effects on Turkey—The treaties of Kutchuk—Kainardji, and Karlowitz—Causes of Turkish decline.

Rise of Prussia—work of the Great Elector of Brandenburg—Charles VI of Austria and the "Pragmatic Sanction"—The Diplomatic Revolution—The Seven Years' War—The triumph of Prussia and England.

IV. The age of the Enlightened Despots—Prussia, Russia, and Austria—Frederic the Great, Catherine I, Joseph II—The Partitions of Poland.

*Three questions will be set on the portion covered by Section I, of which one question will be compulsory, and seven questions will be set on the rest of the subject, of which four will be compulsory.

V. France under Louis XV and Louis XVI—The *Ancien Regime*—The French Revolution—its effects—The Revolutionary wars—Rise of Napoleon—His work and conquests—Downfall of Napoleon—Congress of Vienna.

VI. The Holy Alliance 1815-1830—Influence of Metternich—The Liberal movements in France and Europe—The war of Greek independence—Battle of Navarino.

The era of Revolutions 1830-1848—Fall of Metternich—The Second Empire in France—National movements—Italian and German Unification—Bismarck and the German Empire—Overthrow of Austria—Franco-Prussian War,—The third French Republic.

VII. The Eastern Question—Russo-Turkish relations—The Crimean War—Rise of the Balkan states—Treaty of Berlin 1878.

Modifications of the Berlin settlement—Plans for the reform of Turkey—Abdul Hamid II—His reactionary policy and its results—Incorporation of Eastern Roumelia with Bulgaria 1885—Creation of the Bulgarian Kingdom 1908—Annexation of Bosnia and Herzegovina by Austria-Hungary 1908—Loss of Crete and Egypt—The Balkan wars 1912-1913—The treaty of London 1913.

The German Empire 1870-1914—German culture—Predominance of Germany in Europe—Rivalry with France, Russia and England—Triple Alliance—Dual Alliance—The Triple Entente—Russia and the Slav States—Growth of German influence in Turkey—Austria under Francis Joseph—Serajevo—The Treaties of Versailles and Lausanne.

Books recommended for Section I of the syllabus—

Emerton: Introduction to the study of middle ages.

Gordon: A Junior History of Europe.

For the rest of the Syllabus—

Grant: A History of Europe, Parts III & IV.

For consultation—

Slisson: 20th Century Europe.

Plunkett and Mowat: A History of Europe.

Grant & Temperley: Europe in the 19th and 20th Centuries.

SYLLABUS FOR IV-A AND IV-B ECONOMICS.

N.B.—Students are expected to study economic principles in their application to Indian facts and problems.

Introductory:—Nature and scope of Economics. Economics as a social science. Economic laws. Methods of Economic Science. Definition of the principal economic terms.

Consumption:—Wants of man, their nature and classification, Diminishing utility and elasticity of wants. Consumer's Surplus. Standard of life. Family budgets.

Economic Organisation:—The general structure and evolution of modern industry and trade. Bases of modern economic life: Private property, freedom of contract; Competition and monopoly.

Production:—Nature of production. Agents of production. Their changing importance. Land and other natural agents. Labour and causes affecting its efficiency. The quantity and quality of population. Division of Labour and the use of machinery. Capital—its nature and function. Enterprise. Risk-bearing, speculation and insurance.

Laws of production:—Increasing, diminishing and constant cost. Law of substitution. Large scale production. Localisation of industry. Types of productive organisation: partnership, joint stock companies, co-operative organisation, state enterprise. Industrial combinations. Rationalisation.

Value and Exchange:—Evolution of the market. Value, its meaning. Theories of value. Analysis of Supply and Demand. Cost of production. Joint supply and joint demand. Equilibrium of Demand and Supply. Value during long and short periods. Value and Price. Prices under free competition. Theory of monopoly prices. Speculation and its effects on prices.

Mechanism of Exchange:—Money. Evolution and Functions of Money. Qualities of good money. The Quantity Theory of Money. Systems of Money. The Gold Standard and its variants Bimetallism. Gresham's Law. History of Indian Currency. Credit, its meaning and forms. Instruments of credit. Credit and prices. Paper money. Convertibility and inconvertibility. Indian paper currency. Banking. Functions of banks. Types of banks. Central Banks. Variations in the value of money and their effects.

International Trade:—The basis of international exchange. Free Trade and Protection. Tariffs and bounties. Balance of trade. Foreign Exchanges. The Rupee exchange.

Distribution:—General theory of distribution. The nature and theory of rent, interest, profits and wages; and the causes of their variation. The National Income and its distribution. Problems of distribution; inequality of incomes, socialism, trade unionism.

Public Finance:—The economic functions of the State. Public expenditure and sources of public revenue. General principles of taxation; direct and indirect taxes. Public debts.

Books recommended.—

1. Marshall: Economics of Industry.
2. Clay: Economics for the General Reader.
3. Gide (edited by Row): Principles of Political Economy.
4. Banerjea: Indian Economics (latest edition).
5. R. D. Richards: Groundwork of Economics, 2nd Edn. (University Tutorial Press).

SYLLABUS IN POLITICAL SCIENCE.

GROUPS (iii-b, iv-a AND iv-b).

Syllabus.

Note:—All candidates should answer five questions but candidates of Groups (iv-a) and (iv-b) should not answer more than *three* from either part while candidates of Group (iii-b) should answer at least *one* question from either part.

PART I—THEORY.

I. (a) The State: its characteristics—its relation to other political terms such as nation, society, government.

(b) The origin of the State: Deductive theories, the theory of Divine Right, the theory of social contract—their real value;—Inductive theories—the patriarchal and the matriarchal—the family, patriarchal and matriarchal—characteristics of patriarchal society.

(c) Evolution of primitive headship—expansion of society by slavery, adoption, conquest and amalgamation—illustrations.

II. The Theory of the separation of powers—the contribution of Montesquieu—statement and criticism of the theory.

III. The Sphere of the State. The theory of Laissez Faire—its decline—Modern socialism, collectivism *versus* communism. Theory of Sovereignty.

PART II—COMPARATIVE POLITICS.

IV. Comparative Politics: (Note: Students are expected to have a detailed knowledge of the constitutions of England, France, Switzerland, Germany, United States of America, India and the Self-Governing Dominions).

(a) Tribal Polity: Comparative study of the ancient polities of the Greeks, the Romans and the Germans.

(b) The City State: Its political organisation—general course of political evolution, monarchy, aristocracy, oligarchy, tyranny, democracy—the Spartan and the Athenian constitutions as types of oligarchies and democracies—Historical development of the Athenian constitution, perfection of democracy—contrast between ancient and modern democracies—Greek federal Governments.

Rome—the early republican constitution and the struggle between the orders—its peculiarities—arrest of democracy—constitution of Rome in the 2nd Century B.C.—the transition to the Principate, Government of Augustus, Dyarchy—the later Roman Imperial constitution—Provincial administration, comparison of the Roman and the British Empires.

Decay of the City State—causes.

(c) Feudalism: Its rise and decay—abortive attempts at constitutional Government by representative institutions, illustrations; causes for the success in certain countries like England and for their failure in certain countries like France—Mediæval City States, comparison and contrast with the Ancient City States.

(d) Rise of the Country-State: Geographical discoveries, maritime expansion, rise of the middle class, political effects of the Renaissance and the Reformation—Rise of absolute monarchies, reaction against them in England and France—influence of the French Revolution.

Progress towards constitutional monarchy in England—Constitution making in other countries in the 19th Century—Influence of England and France.

Federations as forms of political organisation.

The British Commonwealth of Nations.

(e) The Legislature: Bicameral organisation—the composition of the two chambers and the distribution of powers—solution of deadlocks—instructed *versus* uninstructed representation—Minority representation.

(f) The Executive: The Parliamentary and the Presidential types—the efficiency of the respective types—advantages and disadvantages.

(g) The Judiciary: General organisation in the different countries.

The 'Rule of Law' and 'Droit Administratif'.

Position of the Supreme Court of the United States.

(h) Parties: Their relation to democratic governments—how organised—the two-party system and group organisation; effects on Parliamentary Government. Place of the permanent Civil Service in modern constitutions.

(i) Constitutions: Rigid and flexible; written and unwritten; their chief contents; constitutional amendment.

Political conventions, their use and value.

V. The League of Nations—its organisation and importance.

Books recommended for study:—

Leacock: Elements of Political Science.

Sidgwick: Development of European Polity.

W. Fowler: The City-State of the Greeks and the Romans.

Dicey: Law of the Constitution.

Strong: Modern Political Constitutions.

Hall and Sen: League of Nations.

Banerjee: The Indian Constitution.

Garner: An Introduction to Politics.

Keith: Dominion Autonomy in Practice.

GROUP (IV-B)—ECONOMICS AND HISTORY.

(1) SYLLABUS IN ECONOMICS—GENERAL.

Same Syllabus as prescribed for Group (iv-A)—Vide page 418.

(2) ECONOMICS (SPECIAL PAPER.)

Part I—Rural Economics.

Scope—A study of the organization and financing of agriculture, and in general, all activities connected with rural uplift, with special reference to India. To include, in particular, co-operative systems and methods, marketing, land tenures and all kinds of State activity for agricultural improvement.

Books recommended—

1. Carver: Principles of Rural Economics.

2. Keatinge: Agricultural Progress in Western India.

3. Matthal: Agricultural Co-operation.

4. Abridged Report of the Royal Commission on Agriculture, 1928.

Part II—Public Finance.

Scope.—The raising and spending of revenues, its theory and practice; including also public debt, financial administration and the economic functions of Government. The whole to be illustrated from the recent financial history of India and England.

Books recommended.—

1. Dalton: Public Finance.
2. Armitage-Smith: The Nature and Principles of Taxation.
3. Report of the Indian Taxation Enquiry Committee.

(3) MODERN ECONOMIC HISTORY OF ENGLAND AND INDIA.

A general survey of the agricultural, manufacturing and commercial developments in England and India from 1600, special attention being paid to the period after the Industrial Revolution in England and that after 1848 in India. The following lines of development should specially be kept in view:—The economic policy of the State, changes in agricultural and industrial methods and organization, transport methods and trade developments, changes in the structure and control of business, tariff policies, growth of banks and financial systems, labour movements and social changes.

Books recommended.—

1. Ashley: Economic Organization of England.
2. Worts: Modern Industrial History.
3. Gaugil: The Industrial Evolution of India.
4. Knowles: Industrial and Commercial Revolutions in the 19th century.
5. Slater: The Making of Modern England.
6. Imperial Gazetteer, Vol. III.

(4) POLITICAL SCIENCE.

The same as for Group (iv-a)—*Vide* page 419.

GROUP (V)—LANGUAGES OTHER THAN ENGLISH.

(1) SANSKRIT.

(a) *Main.*

Sanskrit Language and Literature. The course shall be:—

- (a) Selections from the Early Period, including Vedic Mantras, Brāhmaṇas, Āraṇyakas and Upanishads and the Sūtra literature.

- (b) Selections in prose and verse from the Later Period, including the Dharmasāstras, and the Itihāsa, Kāvya and Nataka literature.

A knowledge of Alamkara-śāstra will be required sufficient for the correct understanding of native commentators.

- (c) Sanskrit Grammar treated historically and comparatively in accordance with a syllabus.

- (d) Translation from and into Sanskrit.

- (e) General History of Sanskrit Literature.

- (f) Early Indian History.

In the examination there shall be two papers, each of three hours' duration in subject (b) and one paper of three hours' duration in each of the other subjects, except Translation which will form part of the papers set on (a) and (b) above.

(b) *Subsidiary.*

The course shall consist of the study of one drama of the classical period and portions of one Kavya. In the examination there shall be one paper of three hours' duration which shall include pieces for translation from Sanskrit into the main language.

SYLLABUS FOR SANSKRIT GRAMMAR FOR GROUP (v)—
LANGUAGES OTHER THAN ENGLISH.

The following syllabus for Sanskrit Grammar treated historically and comparatively has been approved.

Syllabus for Indo-European Philology with special reference to Sanskrit.

N.B.—Knowledge, accurate, so far as it goes, but neither extensive nor minutely detailed, is expected under each head.

P.I.E. = Primitive Indo-European; Ind. Ir. = Indo-Iranian; Skt. = Sanskrit; Gk. = Greek; Lat. = Latin; Teut. = Teutonic.

A. GENERAL.

I. *Elementary Phonetics.*—(a) The organs of speech—production and classification of speech-sounds. Quantity; accent,—sentence-, word-, and syllable accent. Glides.

(b) Phonetic description of all speech-sounds treated in the course. Phonetic transcription.

(c) Sound-change: isolative, conditional; defective imitation and the result of analogy. Meaning of the term 'Law' in Linguistic Science. Dialectal separation. Growth of 'literary languages'. Families of languages. Cognate words and loan words.

II. *The Indo-European Family of Languages.*—The original speech and its earliest dialectal divisions. Branches and sub-branches of the Indo-European Family. Some distinguishing characteristics of the Indo-Iranian, Hellenic, Italic, and Teutonic branches.

III. *Indo-Iranian.*—The Indian Sub-Branch. Dialects of Vedic times. Epic dialects. Classical Sanskrit. Middle Indian Speeches. New Indian Speeches.

B. PHONOLOGY.

IV. *The P.I.E. vowel system.*—The oldest conditions: primary vowels: changes resultant on accent: secondary vowels and syllabic liquids and nasals. Vowel-gradation, quantitative and qualitative; its relation to accent and its bearing on morphology. The later P.I.E. vowel-system prior to the period of languages separation. General treatment of the P.I.E. vowel-system in the oldest Ind-*Ir.*, *Gk.*, *Lat.*, and *Teut.*

V. The vowel-system of *Skt.* in its relation to P.I.E. and to the vowel-systems mentioned in IV. Vowel-gradation in *Skt.*

VI. *The P.I.E. Consonant system.* Classification of the P.I.E. consonants. Earliest dialectal variations; the 'centum' and 'satam' divisions. Treatment of the P.I.E. consonant generally in Ind-*Ir.*, *Gk.*, *Lat.* and *Teut.*

VII. Representation of the P.I.E. consonant-system in *Skt.* liquids and nasals. Plosive consonants. Cerebral consonants (Fortunatov's Law). Palatal and velar consonants. (The law of palatalization.) The law of aspirates (Grassmann's Law), Spirants, Semi-vowels.

VIII. Sandhi, external and internal. Glides in *Skt.* Anaptyxis (*Svarajhakti*). Haplology.

C. ACCIDENCE.

IX. Word-formation. Base, stem and suffix. Prefix-Infix.

X. *Skt.* compounds, nominal and verbal.

XI. *Skt.* suffixes, primary (*kṛt*) and secondary (*taddhita*).

XII. *Nominal Declension.*—P.I.E. conditions. Number. Grammatical Gender. Case and case-endings. P.I.E. case-endings. Syncretism. Contamination. Classification of noun declensions according to suffix. Vowel and consonant-stems.

XIII. *The noun declensions in Skt.* treated historically and comparatively with reference to P.I.E., *Gk.*, *Lat.* and *Teut.* Philological explanation of all case-endings. Comparison of adjectives and formation of adverbs treated philologically.

XIV. *Numerals.*—Philological treatment of the *Skt.* numerals.

XV. Pronouns and pronominal adjectives.—The Skt. pronouns and pronominal adjectives treated philologically with reference to P.I.E., Gk., Lat. and Teut.

XVI. The Verb.—The P.I.E. verbal-system generally treated; voice, mood, tense, augment, reduplication, personal endings. Thematic and Athematic stems. Types of verbal action.

XVII. The Skt. verb in its relation to the P. I. E. verbal system. Present, perfect, aorist and future systems in Skt. Transfer from the athematic to the thematic class. Periphrastic formations. Analogy in the Skt. verbal-system. Derivative verbs—causative, denominative, desiderative, intensive.

XVIII. Voices, moods and tenses in Skt. Infinitive verbal formations.

(2) TAMIL, TELUGU, KANNADA OR MALAYALAM.

The course shall be:—

- (a) The study of selections representative of the several periods of the literature of the selected language including inscriptions.
- (b) The history of the Language and Literature with special reference to the selected books.
- (c) The elements of the Grammar of the language including those of the Prosody and Rhetoric of the language.
- (d) The elements of the Comparative Grammar of the Dravidian Languages.
- (e) Composition generally on literary and historical subjects, relating to the language chosen;
- (f) Early South Indian History (or Language).

(a) SYLLABUS FOR THE COMPARATIVE GRAMMAR
OF THE DRAVIDIAN LANGUAGES FOR
GROUP (v).

I. Introductory.—The origin of language. Classification of languages. Dialectal separation and growth of literary standard languages. Dialects and Cognate languages.

II. Introductory (continued).—The Dravidian group of languages and their chief characteristics. Reasons for choosing the word 'Dravidian' as name of this group. Enumeration of Dravidian languages. Meaning of the names 'Tamil,' 'Telugu,' 'Kannada' and 'Malayalam.' Where they are spoken.

III. Introductory (continued).—Relation between Dravidian languages and Sanskrit. Dravidian element in North Indian vernaculars. Affiliation of Dravidian languages to the Scythian Group. Tamil, the most primitive of Dravidian languages.

IV. *Phonetics*.—Production and classification of speech sounds. Sound changes and their causes. Sounds and symbols. Conditions of a good orthography.

V. *Dravidian alphabets*.—Their history. Differences among existing alphabets. Their adequacy and inadequacy. Comparison of Dravidian sounds with Sanskrit and English sounds.

VI. *Dravidian Phonology*.—The primitive Dravidian parent language—

- (1) Vowel-system.—Changes. Accent. Harmonic sequence of vowels.
- (2) System of consonants.—Origin of cerebrals. Dialectic interchange of consonants. Euphonic permutation of consonants. Sandhi. Nasalization. Anusvara and Ardhanusvara. Prevention of hiatus.
- (3) Dravidian syllabation.

VII. *Roots*.—Dravidian roots arranged into two classes, verbal roots. Nouns. Lengthening of roots. Formative addition to roots.

VIII. *Accidence*: (1) *The Noun*—

- (a) Gender—Dravidian nouns divided into two classes denoting rational beings and irrational things except in Telugu in which they are classified as Mahat and Amahat, the latter including words denoting women. Comparison between Dravidian languages on the one hand and Sanskrit and English on the other.

- (b) Number.—Singular and plural. No dual. Singular. Masculine, feminine and neuter. Plural-principles of pluralization.

- (c) Case.—Principles of case-formation. Dravidian cases.

(2) *The Adjectives*.—Their agreement with substantives like those in Sanskrit. Formation of Dravidian adjectives from Sanskrit derivatives. Formation of adjectives from substantives, relative participles of verbs and past verbal participles. Comparison of adjectives.

(3) *The Numerals*.—Different views about their origin. The cardinals and ordinals. The neuter noun of number and the numerical adjective.

(4) *The Pronouns*.—Light thrown by pronouns on relationship of languages. Persistence of personal pronouns. Pronouns of the first person singular. Comparison of dialects. Analogies. Pronouns of the second person singular. Comparison of dialects. The reflexive pronoun. Pluralization of the personal and reflexive

pronoun. Demonstrative and interrogative pronouns. Demonstrative cases. Interrogative cases. Demonstrative and interrogative adjectives. Demonstrative and interrogative adverbs. Honorific demonstrative pronouns.

(5) *The Verbs*.—Structure of the Dravidian verb. Roots used either as verbs or nouns. Formative particles often added to roots. Classification of verbs into transitive and intransitive. Ways in which intransitive verbs change into transitive. Sanskrit analogies.

(a) Causal verb—Causals formed from transitives. Origin of Dravidian causal particle.

(b) Frequentative verbs.

(c) Conjugational system.—Formation of the tenses. Verbal participles. Their signification and force. The present tense and its formation. The preterite tense and its formation. The future tense. The future formation in Dravidian languages. The relative participle.

(d) Formation of Moods.—Methods of forming the conditional, the imperative and the infinitive; origin of the infinitive suffix.

(e) The Voice—Active and passive—The negative voice. Combination of negative particles with verbal themes. The Dravidian negative particle.

(f) Formation of verbal nouns, derivative nouns and abstract nouns.

(6) *Adverbs*.

IX. *Vocabulary*.—I. Borrowing and its causes. Social, commercial, political and religious. Borrowings from Sanskrit, borrowings from other languages.

2. *Structure and form*.—The essentials for the individuality of a language. Vocabulary cannot change the character of a language. Hybrids. Gain and loss from mixed character of a language.

X. *Comparative Syntax*.—The syntax of the several languages compared. Differences and similarities. The extent of Sanskrit influence over the syntax of the several languages.

(b) SYLLABUS FOR THE HISTORY OF THE TAMIL LANGUAGE.

I. *General*.—The origin and meaning of the word "Tamil". The place of Tamil in the Dravidian family of languages, its high antiquity, the geographical area where it was spoken in

ancient times as referred to by old commentators, the twelve Sen-Tamil and the twelve Kodum-Tamil countries. Very early cultivation of Tamil as a literary language; the three Sangams how far historical; Agastyar; his contribution to Tamil. Tolkappiyam; its importance for the study of the language. The extent of Sanskrit influence on Tamil Grammar.

II. *The periods of Tamil language*.—(1) The old or Sangam Tamil, (2) the mediaeval Tamil and (3) the modern Tamil. Illustrative literature of each period. Grammars of the different periods: Tolkāppiyam, Virasōliyam and Nannūl. The difference between the language of the different periods in point of vocabulary and grammar.

III. *Language and Dialect*.—The standard or literary language and the spoken language, their relation and mutual influence. The difference between the two. Sen-Tamil. Kodum-Tamil. Iyal, Isai, Nātakam Tamils. Dialects: how formed. Different localities and different classes of people in the same locality have different dialects. Are dialects discernible in ancient literary works?

IV. *The Alphabet*.—(a) *The Script*.—its gradual development. Vatteluttu, the grantha-Tamil characters, their geographical distribution, origin and history. The relation of Vatteluttu and grantha-Tamil characters to Brahmi. The form of Tamil characters how far determinable from Tolkāppiyam and the other grammars and commentaries thereon. The dotted e and o. Gradual changes in script. Changes credited to Beschi. (b) *The sound values*. How far the alphabet is phonetic. Its pronunciation, the spoken sounds, and the written symbols.

V. *Phonology*.—Vowels and their relation to the primitive Dravidian vowel-system. Classification of vowels according to the place of production. Diphthongs. Accent and emphasis, accent determining change, *eduttal* (rising accent), *puḍuttal* (falling accent), *nalital* (level or vanishing accent). The influence of accent or word-change and in prosody: alapedai. Mutation of vowels. Vowel harmony. Vowel sandhi—glides.

VI. *Phonology (continued)*.—Consonants and their relation to the primitive Dravidian consonants, classification of consonants according to the place of production. History of consonantal sounds, palatalization, dentalisation, voicing, unvoicing, consonant length. Assimilation. Consonantal alapedai. Dialectal interchange of consonants. Consonantal sandhi. Laws of Tamil syllabation, the initial, the medial, the final letters in a word, the difference between Tolkāppiyam and Nannūl on this point. The light thrown by the rules of syllabation on the nature of loan words.

VII. *Accidence*.—(1) *Nouns*.—Gender and number; how mutually expressive and interdependent. Are Dravidian nouns naturally neuter? Gender prefixes and suffixes, the epicene plural as distinguished from the neuter plural, the neuter plural

suffixes, double plurals, gender and number treatment, how they differ in old and modern Tamil. (2) *Case*, the number of cases and Sanskrit influence, the formation of the oblique case, the inflexional base, the inflexional increments or augments, their varied uses, the suffixes of the various cases, their probable origin and history. The uses of the various cases. Old Tamil, modern Tamil, how they differ in the formation of cases.

VIII. *Accidence* (continued)—*The Pronouns*.—Their form in old and modern Tamil, the three persons and their plural forms, the oblique forms of the pronouns, the phonetic relationship between the oblique and the substantive forms of the pronouns. The reflexive pronouns, the demonstrative and the interrogative cases, old and modern forms. Honorific pronouns.

IX. *Accidence* (continued)—(1) *The Verbs*.—The structure of the verbs, the base, the tense infix and the pronominal suffix, classification of verbs into *tan-vinai* and *pira-vinai*. How far this classification is synonymous with 'transitive' and 'intransitive,' the causals, the modes of forming the causals and the transitives. The various causal suffixes, reduplication. Appellative verbs. (2) The passive voice, the history of *padu*, the different modes of expressing the passive significance and of negative particles in old and modern Tamil. (3) The imperative form of the verb, how the infinitive is formed, the various suffixes in old and modern Tamil. The subjunctive, how expressed in old and modern Tamil. (4) The Tenses;—the tense infixes (*idainalai*, the present, the preterite, and the future). Is there no reference to the present tense in the *Tolkāppiyam*? The difference between the old and modern Tamil as regards the tense formation. *Kīru kuru*, *t*, *t*, *i*, and *u*; and *p*. and *v*. their history, phonetic relationship, etc., and the principles of their use. (5) The relative and the verbal participles, the suffixes forming them.

X. *Accidence* (continued)—*The Adjectives and the Adverbs* (*uriccol*).—The adjectival and the adverbial participles, their origin and history, *The numerals*. The cardinals and the ordinals and the multiplicatives, the numeral bases mainly adjectival in nature, formation of substantive numerals from the base, the principles of formation. The double forms such as *ir* and *ir*, *mu* and *mu*, etc., their uses and the laws governing them. The light thrown by the numerals on the antiquity of Tamil. *The particles* (*idaiccol*), their origin and significance. (Interjections) and conjunctive particles.

XI. *Vocabulary*.—The general character of the Tamil vocabulary at different periods, the so-called pure Tamil. Borrowing, its causes. Periods of borrowing, character, comparative extent of borrowing at each period. Doublets, Telugu and Kannada element, causes of admixture, various periods of entry of Telugu and Kannada words into Tamil. Loss of old words. Nature and extent.

XII. *Vocabulary* (continued).—Sanskrit words; Tatsamas; Samskritasamas and Prakritasamas. Laws of formation. Tadbhavas, Samskritabhavas and Prakritabhavas. Laws of formation. Period of extensive Prakrita borrowing. Other borrowings, Hindi, Portuguese, English, etc., Mani-pravala style. Hybrids, Tests for distinguishing loan words.

XIII. *Word-building in Tamil*.—(1) By composition, compound words like *kadu-ray*, etc. Several kinds of compounds or *tokai*:—*ummai* and *uvamai*, etc. (2) By derivation, the various suffixes used to form nouns, verbs, adjectives and adverbs, etc. (3) Root-creation, bank formation, double bases like *nal*, *nan*, etc. Old and modern Tamil compared as regards the capacity to form new words and also the method of forming the words.

XIV. *Semantics*.—Changes in the meaning and usage. Elevation, degradation, specialisation and generalisation of native and foreign words.

XV. *Syntax*.—Order of words in a sentence. The difference between Poetry and Prose as regards syntax. Deviations from the normal order of words in a sentence and their causes. Sanskrit constructions in Tamil.

(c) SYLLABUS FOR THE HISTORY OF THE TELUGU LANGUAGE.

I. *General*.—The origin and meaning of the word 'Telugu'. The place of Telugu in the Dravidian family of languages. Its antiquity and its geographical distribution. Period of its early cultivation as inferred from the inscriptions. The extent of Sanskrit influence over Telugu Grammar.

II. *Periods of Telugu Language*.—The pre-Nannayya period, the Nannayya period, and the post-Nannayya period. Illustrative literature of each period. Grammar of each period. Difference between languages of different periods in point of vocabulary and grammar.

III. *Language and Dialect*.—The standard of literary language and the spoken language. Their relation and mutual influence. Dialects. How formed? Different localities and different classes of people in the same locality have different dialects. Are dialects discernible in ancient literary works?

IV. *Telugu Alphabet*—

(a) *The Script*.—Its gradual development. The Telugu-Kannada form and its relation to Brahmi, Vengi and Chalukya scripts.

(b) *The sound-values*.—How far the alphabet is phonetic. Its pronunciation. The spoken sounds and the written symbols.

V. *Phonology*.—Vowels and their relation to the primitive Dravidian vowel-system. Classification of vowels according to the place of production. Diphthongs. Accent and emphasis. Accent determining change. Mutation of vowels. Vowel harmony, vowel sandhi.

VI. *Phonology* (continued).—Consonants and their relation to the primitive Dravidian consonants. Classification of Telugu consonants according to the place of production. Consonantal diphthongs. Mutation of consonants. Assimilation of consonants and consonantal sandhi. Other changes in consonants. Palatalization, Dentalization, Voicing, Unvoicing, Compensatory length, etc. The theory of ardhānusvara and the cacuminal dialectic interchange of consonants. Telugu syllabation.

VII. *Accidence*.—Nouns. Gender. Nouns denoting *mahat* and *amahat*. Number. No dual. Principles of pluralization. Different treatment of *tatsama* and *accika* words with regard to the formation of number and gender. Case and case-endings. Principles of case formation. Aupavibhaktikas.

VIII. *Accidence* (continued).—Adjectives. Classification of adjectives. Their agreement with substantives. Formation of adjectives from substantives. Comparison of adjectives.

IX. *Accidence* (continued).—Numerals. Ordinals and cardinals. Declension of numerals.

X. *Accidence* (continued).—Pronouns. Classification of pronouns. Declension of pronouns. History of the Telugu pronouns. Demonstrative and interrogative adjectives. Demonstrative and interrogative adverbs. Honorific demonstrative pronouns.

XI. *Accidence* (continued).—The verb. Structure of the verb. Causal verbs. Atmanepada verbs: Voice: Active and passive. Tenses, present, past and future. Moods, conditional, imperative, infinitive and negative. Formation of verbal participles, verbal nouns, derivative nouns, and abstract nouns.

XII. *Accidence* (continued).—Adverbs. No real adverbs in Telugu.

XIII. *Vocabulary*.—General character of the Telugu vocabulary. The native element. The so-called *acca*-Telugu. Borrowing and its causes. Formation of compounds. Coining doublets. Dravidian basic element. Tamil and Kannada element. Causes of admixture. Various periods of entry of Tamil and Kannada words into Telugu.

XIV. *Vocabulary* (continued).—*Tatsama* words. *Samskritasama* and *Prakritasama*. Laws of formation. Period of extensive Prakrit borrowing. *Tadbhava* words. *Samskritabhava* and *Prakritabhava*. Laws of formation. Other borrowings. Hindustani, Marathi, Oriya, English, French, etc.

XV. Word-Building.—(1) By composition. (2) By derivation. The various suffixes used to form nouns, verbs, adjectives and adverbs, etc. (3) Root-creation.

XVI. Semantics.—Changes in meaning and usage. Elevation and degradation. Specialization and generalization of native and foreign words. Obsolete words.

XVII. Syntax.—Order of words in a sentence. The difference between Prose and Poetry as regards syntax. Deviations from the normal order of words in a sentence and their causes. Sanskritic constructions in Telugu.

(d) SYLLABUS FOR THE HISTORY OF THE KANNADA LANGUAGE.

I. General.—The origin and meaning of the word 'Kannada.' The place of 'Kannada' in the Dravidian family of languages. Its high antiquity and its geographical distribution. Period of its early cultivation as inferred from the inscriptions. The extent of influence of Tamil, Telugu, Malayalam and Marathi, etc., if any, and of Sanskrit over Kannada grammar.

II. The Periods of Kannada Language—

- (1) The period of the written ancient dialect.
- (2) The period of the mediæval dialect.
- (3) The period of the modern dialect.

Illustrative literature of each period. Grammar of each period. Difference between the languages of different periods in point of vocabulary and grammar.

III. Language and Dialect.—The standard of literary language and the spoken language. Their relation and mutual influence. Dialects, how formed. Different localities and different dialects. Badaga, how an ancient Kannada dialect. Are dialects discernible in ancient literary works?

IV. Kannada Alphabet.—

(a) *The Script*—The Kannada alphabet a variety of the so-called Cave-character. Its gradual development. The Telugu-Kannada form and its relation to Brahmi, Vengi and Chalukya scripts, and the script of the *sasanas* of Cochin.

(b) *The sound-values.*—Unlike the Tamil and Malayalam alphabet, the alphabet is perfectly phonetic. The spoken sounds and the written symbols.

V. Phonology.—Vowel system.—Vowels in Accagunnada and those borrowed from Sanskrit. Vowels and their relation to primitive Dravidian vowel system. Classification of vowels according to the place of production. Diphthongs. History of the vowel sounds. Accent and emphasis. Accent determining

change. Mutation of vowels. Vowel harmony. Vowel-sandhi, glides.

VI. *Phonology* (continued)—Consonant system. Consonants in Accagannada and those borrowed from Sanskrit. Consonants and their relation to the primitive Dravidian consonants. Classification of consonants according to the place of production. Consonantal diphthongs. Mutation of consonants. Assimilation of consonants and consonantal sandhis. History of consonantal sounds, doubling of consonants, palatalization, dentalization, voicing, unvoicing, compensatory lengthening, nasalization, denasalization, etc. Dialectic change of consonants. Theory of Kula and Ksala L's and the history of *r* and *l*. Kannada syllabation.

VII. *Accidence*.—Nouns. (1) Gender. Are Dravidian nouns naturally neuter? Nine genders according to the grammarian Kēsīrāja, reducible however to three, masculine, feminine, and neuter. Gender prefixes and suffixes. Gender in metaphorical diction etc.

(b) Number. Words plural in form, but with a dual signification. Principles of pluralization. The epicene plural, the neuter plural, double plurals. Gender and noun treatment, how they differ in old, mediæval and modern Kannada.

(2) Cases and case-endings in old, mediæval and modern Kannada. Percilinds of case-formation.

VIII. *Accidence* (continued).—Adjective or attributive nouns (gunavacanas). Classification of adjectives. Formation of adjectives. Their gender and agreement with substantives. Ordinary nouns and pronominal nouns used as adjectives. Adjectives used as adverbs. Comparison of adjectives.

IX. *Accidence* (continued).—Numerals. The cardinals and the ordinals, the multiplicatives, appellative nouns of number in Kannada and the history and principles of their formation.

X. *Accidence* (continued).—Pronouns. Classification of pronouns. Their forms in the dialects of Kannada. Declension of pronouns. History of pronouns. Reflexive pronouns, demonstrative and interrogative pronouns.

XI. *Accidence* (continued).—Verb. 1. Structure of the verb. The base, the tense suffixes. Classification of verbs into transitive and intransitive, though felt, was not mentioned by Kesiraja and Nagavarma, but introduced by Bhattakalanka about 400 years later. The modes of forming the causals and the transitive.

2. The passive voice. The different modes of expressing the passive significance.

3. The various modes of expressing the negative significance.

434 SYLL. FOR THE HISTORY OF THE KANNADA [APP.
LANGUAGE FOR GROUP (V)—B.A. DEGREE EXAMN.

4. The imperative form of the verb, the infinitive.
5. No moods in Kannada—the conditional or the subjunctive, how expressed.
6. The primary tenses—the present, the preterite and the future. The history of their formation and their uses.
7. Other compound tenses, such as continuative perfect, imperfect future, perfect future, perfect, etc., though not specified in ancient grammars, how expressed.
8. Formation of the verbal participles, verbal nouns, derivative nouns and abstract nouns.
9. The various modes of expressing the English auxiliaries in Kannada.
10. The frequentative or iterative verbs in Kannada, but a kind of such verbs formed by simple (yugalōccāraṇa) or triple repetition (triprayoga).

XII. *Accidence* (continued).—Adverbs, the different modes of their formation and their history.

Conjunctives and their history.

XIII. *Vocabulary*.—General character of the Kannada vocabulary. The so-called Accagannada. Borrowing and its causes. Periods of borrowing, character and comparative extent of borrowing at each period. Hindustani, Marathi, English and Portuguese element. Loss of old words. Nature and extent.

XIV. *Vocabulary* (continued).—Samasamskrita words, tatsama words, tadbhavas, or apabhramas, laws of formation.

XV. *Word-Building*.—(1) By composition. (2) By derivation. The various suffixes used to form nouns, verbs, adjectives, and adverbs, etc. (3) Root-creation.

XVI. *Semantics*.—Changes in meaning and usage. Elevation, degradation, specialization and generalization of native and foreign words.

XVII. *Syntax*.—1. Order of words in a sentence. The difference between Prose and Poetry as regards Syntax. Deviation from the normal order of words in a sentence and their cases.

2. The different kinds of karaka or the relation of the noun to the verb.

3. The uses of the cases.

4. The uses of the singular for the plural and *vice versa* of nouns, pronouns and verbs in a sentence.

5. Use of the singular and plural of Samskrita adjectives and their agreement with nouns.

(c) SYLLABUS FOR THE HISTORY OF THE
MALAYALAM LANGUAGE.

I. *General*.—The origin and meaning of the word Malayalam. The place of Malayalam in the Dravidian family of languages. Its age and the geographical area where it has been in use. Kerala and its peculiar geographical position which brought about the development of Malayalam as a separate language. The beginning of the cultivation of Malayalam as a literary language. Earliest available works such as *Ramacharitam*, their importance for the historical study of the language.

II. *The periods of Malayalam language*.—Ancient, mediæval and modern characteristics of the language. Illustrative literature of each period and difference in point of grammar and vocabulary.

III. *Language and dialect*.—The standard of literary language and the spoken language. Their relation and mutual influence. The extent of Sanskrit influence on vocabulary and grammar. Dialects; How formed? Different localities and different classes of people in the same locality have different dialects. Are dialects discernible in old literary works?

IV. *The Alphabet*.—(a) The Script; its development. Ancient Vatteluttu, modern Arya-eluttu, history of the two scripts. Arya-eluttu and the consequent introduction of Sanskrit pronunciation. Changes in spelling consequent on the transcription of Vatteluttu into Arya-eluttu. (b) *The sound-values*, how far the alphabet is phonetic; its pronunciation: the spoken sounds and the written symbols. Causes of the differences in pronunciation and spelling in modern Malayalam. Spelling reform. Words spelt variously. Need for amplifying the Arya-eluttu so as to facilitate the presentation of English sounds in Malayalam. Difference between ancient and modern pronunciation.

V. *Phonology*.—(a) 1. Vowels and their relation to primitive Dravidian vowel systems. Classification of vowels according to the place of production. Diphthongs. Interchange of short vowels in Malayalam and other cognate languages. Long vowels mostly secondary. (b) Consonants and their relation to primitive Dravidian consonants. Classification of consonants according to the place of production. History of consonantal sounds, palatalization, dentalization, voicing, unvoicing. Consonant, length, Assimilation. Interchange of consonants in Dravidian languages: (a) palatals for gutturals and dentals; (b) linguals for dentals, etc. Conjunct consonants how formed; the part played by them in word-building.

VI. *Accidence*.—Nouns. (1) Nominal basis—primitive and derivative, noun-compounds, ancient and modern. Inflection of nouns for gender, number and case. *Origin of gender* in Dravidian: Co-ordination of nouns and demonstrative pronouns: instances where these pronouns are used to denote gender. Changes of the demonstrative pronouns when used as terminations; (a) masculine (b) feminine (c) neuter. Are Dravidian nouns naturally neuter? Gender prefixes and suffixes. Poetic gender. Result of personification—based on Sanskrit usage. Concord of qualifying adjuncts (attributes) and qualified words. *Number*: Suffixes ar, ir, or, mur, etc., *Kal* the most ancient plural Suffix—its changes. Difference in the use of plural forms. Honorific and epicene plurals. Double plurals kalviar, kanniar, avargal, exceptional forms of plural nouns always used in the plural. *Case*: the number of cases and Sanskrit influence; the formation of the oblique case; the inflexional base; cases formed by suffixes and cases formed by agglutination. *Gatis*, their origin and history. Functions of cases and their significance. Metaplastic forms.

VII. *Accidence* (continued)—*The Pronouns*.—Personal, demonstrative and interrogative; the last used as relative pronouns. The age of pronouns in the language. Their forms in old and modern Malayalam. Comparison of Dravidian pronouns. Honorific pronouns.

VIII. *Accidence* (continued).—*The Verbs* (1) The structure of the verbs; the base; formative particles added to roots. Classification of primitive roots according to (1) form—strong and weak; (2) sense—(a) Transitive, (b) Intransitive; (c) Reflexive or Neuter; (d) Verbs whose agents do not come in the nominative case. Classification of secondary roots: (a) Transitive verbs derived from Intransitive and Neuter verbs; (b) Causal verbs derived from Intransitive and Transitive verbs; (c) Demonstrative verbs; (d) Frequentative verbs.

Finite Verbs. Tenses—suffixes—personal terminations—origin of each; loss of personal terminations. Compound tenses. *Moods*—How the imperative is formed; How the infinitive is formed; Indicative, Optative, and Potential moods. *Voices*: Is there passive voice in Dravidian Languages? Devices for denoting the idea of the passive voice; the history of *pedu negative verbs*: the growing disuse of the negative tenses.

Infinitive Verbs.—Double parts of speech, incapable of serving as a complete predicate in a sentence. Verbal nouns and nouns of agency. Participles qualifying nouns as adjectives. Participles modifying verbs as adverbs.

IX. *Vocabulary*.—The general character of the Malayalam vocabulary at different periods. Indigenous words, cognate words—Tatsamas and Tadbhavas and causes of the latter. Borrowing—periods and causes of the borrowing; the purposes for

which foreign words were borrowed. Loss of old words—nature and extent.

X. *Word-building in Malayalam*—(1) by composition—Several kinds of compounds; (2) by derivation—The various suffixes used to form nouns, verbs, adjectives, adverbs; (3) Root-creation.

XI. *Semantics*—Changes in the meanings and usage. Elevation, degradation, specialization and generalization of native and foreign words.

XII. *Syntax*—Order of words in a sentence—the difference between Prose and Poetry as regards syntax. Special deviation from the normal order of words in a sentence and their causes. Sanskritic constructions in Malayalam.

(3) RELATED SUBJECT: THE DRAVIDIAN LANGUAGES:
 SYLLABUS FOR EARLY SOUTH INDIAN HISTORY.

I. *Geographical divisions, etc., of India*.—India, south of the Vindhyas; Mahismati, the recognised point of separation between the north and the south; Dakhan and South India; Kistna the dividing line.

II. *Early inhabitants and their civilization, etc.*—Primitive inhabitants, their civilization and culture; the Aryan expansion southwards; knowledge of South India in Early Indian literature, Sanskrit and Pali; story of Agastya and his disciples; beginnings of Tamil literature.

III. *Cis-Vindhyam India in the Mauryan age*.—The Dakhan and South India in the Mauryan age; extent of Asoka's empire and his relations with South India; the rise of the Andhras; Kharavela and Kalinga; South India and Ceylon.

IV. *The Andhras of the Dakhan*.—The Andhras, their original home; their early history; Andhras in the Puranas; the later Andhras; the extent of the empire and its divisions; religion, literature, etc., under the Andhras; break up of the Andhra empire.

V. *South India in the early centuries of the Christian Era*.—South India at the dawn of the Christian era; political divisions of South India; contact with the outside world; commerce and colonization; Tamil literature of the period and its character.

VI. *The Pallavas and connected dynasties*.—The Pallavas and the Tondaiyar; Tondamandalam and its reclamation; Tondamandalam Tiraiyan of Kanchi; Satavahana expansion southwards; the Early Pallavas and their origin; their relation to the Andhras and the Tamil rulers of the South; the history of the Early Pallavas; the invasion of Samudragupta; the further

history of the Early Pallavas, Kadambas, Gangas, and other minor dynasties and their relation to the Pallavas; Pallava supremacy in South India; Pallava culture.

VII. *Cis-Vindhyan India in the age of the Guptas.*—Feudatories of the Andhras; the Chutus, the Abhiras, etc.; the Vidhyakas, the Vishnukundins, the Salankayanas, etc.; the Vakatakas; their rise and early expansion; the character of Samudragupta's southern invasion; the Vakatakas and the Guptas; continuance of Vakataka rule.

VIII. *The Pallava ascendancy in South India.*—Pallava ascendancy in South India; the great Pallavas of the Simhavishnu line; the extension of Pallava authority into the Chola country; the Pallava-Chalukya struggle; check to the Chalukya advance in the south under Pulakesin; the continuation of the struggle; overthrow of the Simhavishnu line by Nandivarman Pallavamalla; literature, art, etc., during the period.

IX. *The Chalukyas of Badami.*—The Early Chalukyas; Chalukya expansion under Pulakesin; check to Harsha's Imperial expansion; foundation of the kingdom of the Eastern Chalukyas; the successors of Pulakesin II; Chalukya overthrow by the Rashtrakutas; the general condition of the Chalukya kingdom: Hiuen-Tsang.

X. *The later Pallavas and the Pallava-Pandya Struggle.*—Later Pallavas; Nandivarman Pallavamalla; restoration of Pallava ascendancy. The Pallava-Pandya struggle; the Pallavas and the Rashtrakutas; the rise of the Gangas; the Gangas as Rashtrakuta feudatories; Dantivarman; Nandivarman of Tellaru; Nripatunga and Aparajita; the end of the Pallava ascendancy and the rise of the Cholas.

XI. *The Rashtrakuta Ascendancy.*—The Rashtrakutas; Dantidurga and the Pallavas; Krishna I, Dhruva and the Gangas; Govinda III; the expansion of the Rashtrakuta power; relation with the Gurjaras and of the Palas and the Eastern Chalukyas; the greatest expansion of the Rashtrakuta power under Amoghavarsha; the Gujarati branch of the Rashtrakuta; Krishna II; Krishna III; successors of Krishna III; Rashtrakutas and Paramaras; the supersession of the Rashtrakutas by the Chalukyas.

XII. *The Eastern Chalukyas.*—Eastern Chalukyas; change of relationship with the accession of the Rashtrakutas to power; Vijayaditya II; assertion of the Rashtrakuta ascendancy under Govinda III and Amoghavarsha; relation between the Eastern Chalukyas and the Pallavas; internal dissensions; Chola intervention; Rajaraja II of the Eastern Chalukyas.

XIII. *The Chola Ascendancy in South India.*—The rise of the Cholas; the Pallava-Pandya wars; Vijayalaya; Aditya;

Parantaka, the founder of the greatness of the Cholas; the Chola-Rashtrakuta struggle; Rajaraja the Great; Rajaraja; his relations with the Eastern Chalukyas; Rajendra and the expansion of the Chola empire; his invasions of Northern India and across the seas; the Chola Pandya war in the second half of the twelfth century; Ceylonese intervention; Kulottunga III; and the reassertion of Chola authority over the Pandyas; the revival of the Pandya power; the last Cholas; the Hoysala intervention; the establishment of the Pandya ascendancy; end of the Cholas.

XIV. *The Chalukyas of Kalyani.*—The later Chalukyas; the overthrow of the Rashtrakutas; the Chola conquest of Gangavadi and its results; the first wars of the Chalukyas against the Cholas; the Raichur Doab, the bone of contention; Somesvara Ahavamalla and the successors of Rajendra I; relation between the Eastern and the Western Chalukyas; Chola-Chalukya wars under Somesvara II and the early years of Vikramaditya; Vikramaditya VI; the condition of his empire; the successors of Vikramaditya; the rise of the feudatory states; the Kalachurya usurpation; the Chalukya restoration and extinction.

XV. *The Pandya Revival in the South.*—The revival of Pandya power under the successors of Kulottunga III; Rajaraja II; Pandyan invasions under Maravarman Sundara Pandya I; Hoysala intervention; Hoysala alliance with the Pandyas; Hoysala dominance in the South under Maravarman Sundara Pandya II; Jatavarman Sundara Pandya I; his wars and the end of Hoysala dominance in the Tamil country; successors of Jatavarman Sundara; Maravarman Kulasekhara and the prosperity of the Pandya kingdom; the wars between his sons and the Muhammadan invasion.

XVI. *The Feudatory Dynasties; I. The Hoysalas.*—The feudatories of the Chalukyas; the Hoysalas of Dvarasamudra; foundation of their power; its growth under Vishnuvardhana and Vira Ballala II. Hoysalas as an independent dynasty; Narasimha II and the Hoysala expansion southwards; Somesvara and the Hoysala ascendancy in the south; division of the empire between Narasimha III and Vira Ramanatha; Vira Ballala III, ruler of the whole of the Hoysala territory; the Muhammadan invasions.

XVII. *The Feudatory Dynasties; II. The Yadavas of Devagiri.*—Seunas or Yadavas of Devagiri; the early rulers; Bhillama III, Viceroy of Somesvara I; Seunachandra II, Bhillama IV, the first paramount sovereign of this dynasty; Jaituji; Singhana; Devagiri, his capital; his wars against the Hoysalas and the Kakatiyas; Krishna and Mahadeva; relations between the Yadavas and the Kakatiyas; Yadavas and the Hoysalas; Ramachandra; Muhammadan invasions under him; Harapala; reduction of the kingdom by Mubarak Khilji.

XVIII. *The Feudatory Dynasties; III. Kakatiyas of Warangal.*—Foundation of the Kakatiya power. Prola; Prataparudra;

transfer of capital to Warangal; Mahadeva; Ganapati-Rudrama or Rudramba Prataparudra II; Muhammadan invasions in his reign; Krishna, his son the last ruler of the dynasty.

XIX. *The Muhammadan Invasions and the Foundation of Vijayanagar.*—Muhammadan invasions of South India, their character, extent, and result; the empire of Muhammad Tughlak; Muhammadan possessions south of the Vindhya; Hindu struggle for the independence under Hoysala leadership; foundation of Vijayanagar and the Bahmani kingdoms.

XX. *Vijayanagar under the first dynasty.*—The first dynasty; Harihara and Bukka; the wars of the latter; Harihara II, assumption of imperial titles and responsibility; relations with the Bahmani kingdom under Harihara and his successors; the Bahmani wars and their character; Devaraya II, the greatest ruler of the first dynasty; the city and the empire under him, rise of Orissa; alliance between Orissa and the Bahmani kingdom; Devaraya's successors; condition of the empire.

XXI. *Vijayanagar under the usurpation; Saluvas and Tuluvas.*—The rise of the Saluvas; their position in the empire; the Bahmani and Orissa invasions; Saluva Narasinga; the character of his usurpation; his services to the empire; Narāsa as *de facto* ruler; his son Narasimha II and general rebellion in the empire; accession of Krishna Devaraya: the condition of the Bahmani kingdom in the period of usurpation and after; wars against the Bahmani kingdom and the Raichur; the condition of his empire; rebellions in the empire and the last years of Krishna. Achyuta's restoration of order in the empire; character of his later administration; rise of Achyuta's brothers-in-law the elder and the younger Tirumala; Sadasiva; the rule of the brothers Rama, Tirumala and Venkata.

XXII. *Vijayanagar under the de facto rule of the brothers.*—Sadasiva the nominal ruler; relations with the Bahmani kingdom; condition of the distant south; "fishery coast" and Travancore; foundation of the Nayakship of Madura; the Portuguese; Talikota and its results; condition of the empire.

XXIII. *The later empire at Penukonda.*—The new empire at Penukonda; Tirumala; the successors of Tirumala; division of the empire; Sriranga emperor; his struggle against the advance of Muhammadans; the empire reunited under Venkata; disaffection in the southern provinces; wars against the Muhammadans; end of the viceroyalty of Seringapatam; foundation of Mysore; death of Venkata.

XXIV. *The decline and fall of the Vijayanagar empire.*—War of succession; the weakened condition of Vijayanagar; the provinces of the empire; Gingi, Tanjore, Madura, Mysore, and Ikkeri; the advance of the Mughals in the Dakhan, precarious condition of the Vijayanagar Empire; the last Emperor, Sriranga; his struggle for a united empire; end of the empire.

XXV. *Madura and Mysore, the sole remnants of the empire.*
—Madura and Mysore continue as remnants of the empire; Mahrattas in the South; Shaji's conquests for Bijapur; occupation of Gingi and Tanjore; Sivaji's invasion of the south; Madura under the Nayaks; Mysore under Chikkadevaraya Odaiyar and his successors to the usurpation of Hyder Ali.

(4) URDU.

The course shall consist of:—

- (a) Prose books from different periods, including at least one modern work.
- (b) Poetry books from different periods, including at least one modern work.
- (c) Translation from prose and poetry books other than the set books, translation from English into Urdu to be made in an approved modern style.
- (d) History of Language and Literature.
- (e) Indian History—Muslim Period, or Arabic or Persian.

(5) (a) ARABIC OR PERSIAN (MAIN).

The course shall consist of:—

- (a) Prose books selected from different periods.
- (b) Poetry books selected from different periods.
- (c) Translation from prose books other than the set books: translation from the set poetry books and from English into Arabic or Persian prose.
- (d) History of Language and Literature with special reference to the set books.
- (e) A selected period of early Muslim History.

The periods of History for Persian or Arabic may be one or other of the following:—

1. The four first Khalifas and the Umayyad Khalifate, excluding Africa and Spain.
2. The Abbasid Khalifate, excluding Africa and Spain and the wars of the Crusades.
3. The Muslim conquest of Egypt and Northern Africa until the fall of the Abbasid Khalifate and excluding the wars of the Crusades.
4. The Arab conquest of and rule in Spain.
5. The wars of the Crusades.

(b) ARABIC OR PERSIAN (SUBSIDIARY).

The course shall consist of the study of selected pieces from one poet of the classical period and selected portions from the works of one standard prose writer. There shall be one paper in the examination of three hours' duration which shall include pieces for translation from Arabic or Persian into the main language.

(6) ORIYA OR MARATHI.

The course shall be the same as for the Dravidian Languages, with the substitution of Gaurian Grammar for Dravidian Grammar, and of the Early History of Orissa or the History of the Marathas respectively for Early South Indian History.

(7) GREEK OR LATIN.

The course shall consist of:—

- (c) Prescribed portions of the writings of the more important Greek or Latin authors.
- (b) Grammar of the language with reference to Indo-Germanic Grammar.
- (c) Greek or Latin Prose composition and translation of unprepared passages.
- (d) A general knowledge of Greek History to the death of Alexander, or of Roman History to the death of Trajan, with a more minute knowledge of some prescribed period.
- (e) A general knowledge of Greek or Roman Literature with a more minute knowledge of the authors of the prescribed books.

(8) FRENCH OR GERMAN.

The course shall consist of:—

- (a) The study of set books representative of various periods of French or German literature.
- (b) The History of French or German literature with special reference to the set books.
- (c) The history of the French or German language.
- (d) Translation from French or German into English, and of English into French or German.
- (e) Composition.
- (f) A period of European History with special reference to French or German History.

In the examination the subjects for composition shall be taken from the set books or shall relate to the periods of French or German literary or political history studied in the course. In the translation paper, the passages set for translation from French or German into English shall be specimens of modern French or German, not taken from the set books.

(9) HEBREW.

The course shall consist of:—

- (a) Set books.
- (b) Grammar and translation from and into Hebrew.
- (c) History of the Language and the Literature.
- (d) A selected period or periods of the History of the Jews.

Syllabus for the History of Literature for Arabic, Persian and Urdu under Part II.

(Any one of the following periods may be prescribed).

Periods of Literary History for Arabic.—

- 1. Pre-Islamic Period.
- 2. First two Centuries of Islam.
- 3. Later Abbasid Period—up to the sack of Bagdad.
- 4. History of Arabic Literature in Spain.

Periods of Literary History for Persian.—

- 1. Persian Literature under Tribal Kings—850—1000 A.D.
- 2. Safani Period.
- 3. Development of Persian Literature in India.
- 4. Modern Persian Literature.

Periods of Literary History for Urdu.—

- 1. Early Hindi and Dakhni Literature.
- 2. From Wall to Mir and Sawda.
- 3. From Sawda to Ghalili.
- 4. Development of Prose after 1858.
- 5. Modern Essays, Novels and Dramas.
- 6. Modern Urdu Poetry.

GROUP (VI)—INDIAN MUSIC.

In addition to the Intermediate Syllabus, the course shall include the following:—

Theory.—

1. *Acoustics.*—Production and transmission of sound waves; simple harmonic motion; vibrations of stretched strings; sympathetic vibration; Reflection of sound waves and echoes. Acoustics of the auditoria.

2. *Physiological Acoustics.*—Ear, larynx, etc.

3. *Musical Instruments.*—Musical Instruments that are in use in Southern India and their classification into stringed, wind and percussion groups. A general knowledge of the structure of the Violin, Veena, Tambura, Gotuvadyam, Flute, Nagaswaram, Mridangam, Tabala and Tavil.

4. *History of Music.*—History and development of South Indian Music with special reference to the following scholars, composers and musicians:—

1. Ahobala.
2. Rama Amatya.
3. Venkatamakhi.
4. Purandara Das.
5. Narayana Tirtha.
6. Bhadrachala Ramadas.
7. Parameswara Bhagavathar.
8. Maha Vaidyanatha Ayyar.
9. Somanath.

Biographies of the above.

5. Principles of Musical Composition.

6. Gamakas; the theory of 22 srutis.

7. A knowledge of the following 20 ragas and of at least one musical composition under each:—

- | | |
|-------------------|--------------------|
| 1. Asaveri | 11. Natakuranji |
| 2. Dhanyasi | 12. Athana |
| 3. Gaullpantu | 13. Kedaram |
| 4. Chakravakam | 14. Begada |
| 5. Ritigaula | 15. Hamsadhwani |
| 6. Kharaharapriya | 16. Nilambari. |
| 7. Sriranjani | 17. Suddha Saveri. |
| 8. Darbar | 18. Kamavardhani |
| 9. Sahana | 19. Poorva Kalyani |
| 10. Surati | 20. Saranga. |

8. Critical study of two kritis each of Tyagaraja, Muthuswami Dikshitar and Syama Sastri and two musical compositions each from any five of the following 22 composers:—

- | | |
|---------------------------|-------------------------------|
| 1. Anayya | 13. Mysore Sadasiva Rao |
| 2. Arunachala Kavirayar | 14. Pallavi Seshayyar |
| 3. Doraiswamy Ayyar | 15. Ramnad Srinivasa Ayyan- |
| 4. Garbhapurivarur | gar |
| 5. Gopala Krishna Bharati | 16. Dharmapuri Subbarayar |
| 6. Pallavi Gopalayya | 17. Subbaraya Sastri |
| 7. Kshetragna | 18. Patnam Subrahmanya |
| 8. Veena Kuppayya | Ayyar |
| 9. Lakshmana Pillai | 19. Tirtha Narayanaswami |
| 10. Muthiah Bhagavathar | 20. Thiruvotiur Tyagayyar |
| 11. Purandaradas | 21. Vasudevachari (Mysore) |
| 12. Ramaswami Sivan | 22. Swati Tirunal (late Maha- |
| | raja of Travancore). |

There shall be two theory papers of three hours' duration each carrying 100 marks.

PRACTICAL.

There shall be two practical examinations carrying 100 marks each and students shall show their musical proficiency either through vocal music or by playing one of the following instruments:—

1. Violin. 2. Veena. 3. Flute. 4. Gotuvadyam.

At the practical examination, the candidates' knowledge of tuning of the Violin, Veena, Tambura and Gotuvadyam will be tested.

Note:—Candidates need not and will not be allowed to sing while playing on an instrument during practical examinations.

Candidates will be expected to:—

- (i) sing or play compositions in Adi, Roopaka, Triputa, Chapu and Jampa talas;
- (ii) sing or play to the accompaniment of the Tambura;
- (iii) sing or play *manodharma swaras* in the songs learnt by them in the following six ragas:—

- | | | |
|-------------|-------------------|-------------|
| 1. Todi | 2. Bhairavi | 3. Mohana |
| 4. Kambhoji | 5. Sankarabharana | 6. Kalyani. |

A separate minimum of thirty per cent. under Theory and thirty-five per cent. under Practical Examination will be required.

Books for Reference—

1. Gayakalochanam by Tachur Singaracharlu.
2. Ganendu Sekharam by Tachur Singaracharlu.
3. Pallavi Swarakalpavalli by Tiruvottiur Tyagayya.

4. Sangita Sampradaya Pradarsini by Subbarama Dikshitar (2 vols.).
5. Sangita Swara Prastara Sagaram by Nadamuni Panditar.
6. Karunamirtha Sagaram by Abraham Pandithar.
7. Principles of Layam by K. Ramachandran, (The Indian Music Publishing House, Madras).
8. Music of Hindusthan by A. H. Fox-Strangways.
9. Music and Musical Instruments of Southern India and Deccan by Capt. Day.
10. Madras Museum Bulletin on South Indian Musical Instruments by P. Sambamurti (Government Museum, Egmore, Madras).
11. Musical Instruments in the Indian Museum, Calcutta, by Dr. Meerwarth.
12. Richardson: "Sound".
13. Acoustics of the Auditoria by Davis and Kaye.
14. Svaramalakalanidhi—edited by M. S. Ramaswami Ayyar, (Annamalai University Publication).
15. Harmonia Bodhana Sangitha Rathnam—edited by Subrahmanya Ayyar, (Kamakshi Vilas Book Depot, Vepery, Madras).
16. Varna Malika by K. Ramachandran—(Messrs. V. Venkateswarlu Sastrulu & Co., Esplanade, Madras).
17. Chathurdandiprakasika published by the Music Academy, Madras.
18. Gana Bhaskara by K. V. Srinivasa Ayyangar.
19. Syama Sastri and other composers by P. Sambamurti.
20. Guruguha Ganamrta Varshini by Vedanta Bhagavata.
21. Kirtana Sagaram, Part II, by P. Sambamurti.

GROUP (VII)—GEOGRAPHY.

- (1) *Regional Geography*:—The study of a larger region, such as a continent or continents, and a more detailed study of a smaller region—both regions being prescribed from time to time.

For 1938 { Special Continent—North America.
 { Special Region—The Ganges Region.

- (2) *Economic Geography*.—

- (i) *General relations between Physical and Economic Geography*:—The influence of physical features, climate and the nature and distribution of soils and minerals on the distribution and growth of vegetation and animal life, and on the occupations, health and efficiency of man.
- (ii) *Chief World Commodities*:—Distribution and conditions of production, relative supply and markets. Foodstuffs of vegetable and animal origin—mineral

products—materials used in the textile industries—rubber, oils, timber, leather, and other articles of importance in the world commerce.

- (iii) *Chief Industries*:—Their regional distribution, special attention being paid to textile, iron and steel, ship-building and chemical industries—sources of mechanical power—the labour force in various parts of the world.
- (iv) *Transport and Trade-routes*: inland and oceanic—relation to hinterland and markets. World ports—Exchange of products. Development of new regions and sources of trade.
- (v) *Study of a particular region* other than that selected for special regional study—to be prescribed from time to time.

Special Region (for 1938)—Japan.

(3) *Physical Basis of Geography*:—

- (i) (a) An elementary knowledge of the common rocks and of the simple geological structures and of the influence of geological factors on land forms.
- (b) A very simple and general treatment of the geological history of the earth's crust, indicating the main features of the great geological systems—Archaean, Palaeozoic, Mesozoic, and Tertiary.
- (ii) A more detailed treatment than in the Intermediate syllabus, of the surface features of the Earth with special reference to the evolution of land forms and to the various theories which have been put forward to account for their development.
- (4) *Cartography*:—The study and interpretation of topographical maps of various scales and types, and of very simple geological maps. Methods of showing relief and other features. Scales and their transformation. A knowledge of the principal maps in use in the chief countries of the world and the 1/M International map.

Simple methods of survey, including the use of the chain, the plane-table, prismatic compass, and the clinometer.

The principles of the following projections:—Mercator, Mollweide, simple conical, Gall's stereographic, orthographic, and Lambert's equivalent azimuthal. Candidates are expected to know the principle underlying each projection, its defects and its suitability for particular purposes or areas. They should be able to identify each projection as far as possible by inspection or rough measurement.

Candidates will be expected to show some acquaintance with field work; and their field work note-books will be submitted for scrutiny.

GROUP (VIII)—ISLAMIC HISTORY AND CULTURE.*

Books recommended for study.—

(1) GENERAL HISTORY OF ISLAM:—

Amir Ali: A Short History of the Saracens.

Muir: The Caliphate; Its Rise, Decline and Fall.

(2) CIVILISATION AND CULTURE OF ISLAM:—

Amir Ali: The Spirit of Islam.

Arnold: The Legacy of Islam.

Hell: The Arab Civilisation.

(3) HISTORY OF INDIA WITH REFERENCE TO THE ROLE OF
ISLAM:—

Dodwell: The Cambridge Shorter History of India.

Elphinstone: History of India.

(4) POLITICS—as for Group (iv-a).

(5) ECONOMICS—as for Group (iv-a).

Text-Books for the B.A. Degree Examination, 1938.

ENGLISH.

1938.

Shakespeare.—

Henry IV, Part I.

Antony and Cleopatra.

Poetry.—

Milton: Lycidas.

Johnson: London.

Shelley: The Euganean Hills.

Arnold: Thyrsis.

Browning: Fra Lippo Lippi; Cleon.

Morris: Defence of Guenèvre.

Prose.—*Detailed Study.*—

Swift: Selections. The Travellers' Library (Cape).

Stevenson: Selections—S. G. Dunn (Longmans).

Treble: Modern Literary Essays (University of London Press).

*The Syllabus for Group (VIII)—Islamic History and Culture—will take effect from 1937-38 i.e., from the Examination of 1939.

Non-detailed Study.—

Thackeray: The Newcomes.

Burke by John Morley—Men of Letters Series (Macmillan).

Tagore: Lectures and other Addresses, Ed. Soares (Macmillan).

SANSKRIT.

1938.

PART II.

1. Bhavabhūti's Uttarakāmarita.
2. Śiṣupālavadha by Māgha—Canto I only.
3. Kādambarīsamgraha—Pūrva Bhāga from the beginning to the end of the paragraph ending with the words—
प्रतिपन्नपाशुपतव्रतां कन्यकां ददर्श (pages 1-61). (To be had of Mahāmahōpādhyāya R. V. Krishnamachariyar Avargal, Munitrayamandiram, Kumbakonam.)
4. Jayadeva's Candrālōka—5th Mayukha—(Alaṅkāra Prakaraṇa) text only. (To be had of the Proprietor, Gujarati Printing Press, Bombay).

In connexion with the *History of Sanskrit Literature*, a detailed study of Chapters X to XIV in Macdonell's *History of Sanskrit Literature* and of the whole of Keith's *Classical Sanskrit Literature* (Heritage of India Series) is recommended.

Note.—All these Sanskrit and English books can be had either through the Oriental Book Supplying Agency, 15, Shukrawarpet, Poona, or through the Proprietor, the Punjab Sanskrit Book Depot, Lahore.

PART III—GROUP (v).

(a) A. A. Macdonell: Vedic Reader, the following selections:—

- Agni, I—1.
- Savitṛ, I—35.
- Maruṭs, I—85.
- Viṣṇu, I—154.
- Funeral Hymn, X—14.
- Pitaras, X—15.
- Gambler, X—34.
- Yama, X—135.

Aitarēya-brāhmaṇa, VII—iii and iv.

Gautama Dharma Sūtra—Text only—Praśna I corresponding to Chapters I to IX—Bibliotheca Sanskrita. (Government Press, Mysore, or Anandasrama Press, Poona).

Kaṭhapaniṣad—First Adhyāya. (Text only).

450 TEXT-BOOKS IN SANSKRIT AND MARATHI FOR [APP.
B.A. DEGREE EXAMINATION, 1938.

(b) Śākuntala.

Bhaṭṭanārāyaṇa's Veṇisamhāra.

Bāṇa: Harṣacarita, Uucchvāsa III. (Nirnaya Sagara Press, Bombay).

Patañjali: Mahābhāṣya, I, i, i.

Māhābhārata—Prajāgaraparva (Chapters 33—40, both inclusive) in the Udyogaparva, according to T. R. Krishnacarya's edition or the Guzarati Printing Press edition, Bombay.

Nilakaṇṭha Vijaya by Nilakaṇṭha Dikṣhita, Uucchvāsa I only. (The Proprietor, Balamanorama Press, Mylapore, Madras.)

(c) History of Sanskrit Literature.—

Books recommended for Study.—

Dr. Macdonell's "History of Sanskrit Literature" and "India's Past."

Keith's Classical Sanskrit Literature—Heritage of India Series.

Related Language.

Śākuntala.

Raghuvamśa—Cantos IV and VI.

Related Subject.

Early History of India to the beginning of the present era (i.e., Christian era).

Books recommended.—

E. J. Rapson:—Ancient India. (Cambridge University Press).

V. A. Smith: Early History of India.

Dr. Macdonell's 'India's Past.'

MARATHI.

1938.

PART II.

For Non-detailed Study.—

Dharma sastra-vicar by P. V. Kane—Pages 1 to 36; 65–112; and 260–299. Published by P. M. Bhagawat-Manj Printing Bure u, Bombay.

For Detailed Study.—

Prose.—

Pratibha sadhan—N. S. Phadke.

Maze Ramayan—Tuljapurkar, Janma and Aranya kandas only.

Poetry.—

Dhyaneswari—Chapter IX.

Karna-parva—Moropant. Chaps. 11—18.

Grammar.—

General principles of Grammar with Prosody—Alankara Darpana by R. V. Talekar.

For History of Language & Literature.—

- (1) Maharashtra Sarasvat: Part I—3rd Edn. by Bhawe. pp. 1-22, 114-140; Part II, pp. 49-72 and 207-246.
- (2) Bhasha Sastra ani Marathi Bhasha by K. P. Kulkarni—Chaps. X, XI and XII.

PART III—GROUP (v).

Prose.—

1. Kesaritil Nivadaka Nibandha, Part I, by N. C. Kelkar, B.A., LL.B.
2. Life of Thorale Shahu Maharaj by M. R. Chitnis.
3. Maze Ramayan by D. Tuljapurkar, B.A., LL.B.
4. Atma Vidya by Godbole, B.A.

Poetry.—

Waman: (1) Niti and Vairagya Shatak.
(2) Gangalahari.

Moropant: (1) Krishna Vijaya. Uttarardha, Chapters L—LIX.

(2) Dhyaneshwari, Chapter X.

(3) Drama-Vikarvilasita—by G. G. Aagarkar, M.A.

Related Subject.—

1. History of the Marathas by Grant Duff.
2. Rise of the Maratha Power, M. G. Ranade, M.A., LL.B.

For Comparative Grammar.—

Books recommended.—

1. Dr. R. G. Bhandarkar's Wilson Philological Lectures (1877) on Sanskrit and Prakrit Languages derived from it (Bhandarkar's Research Institute, Poona).
2. Dr. Gune's Introduction to Comparative Philology, Part I and Part V.

Note.—All the above books can be had at Messrs. Parachure Puranik & Co., 'Madhav Bagh', Bombay.

ORIYA.

1938.

PART II.

Drama.—

1. Prakruta Pranaya Natak by R. R. Deo.
2. Purushottama Deb Natak by Godavarish Misra.

For Detailed Study.—

Prose.—

1. Prabhandha Prakasa by Ratnakara Patl.
2. Bhakta Kabi Madhusudan by K. Panigrahi.

Poetry.—

1. Tapaswini by Gangadhar Mehara.
2. Rahasya Manjari by Deba Durlabha Das (Prachi Grantha Mala Series).

For Non-detailed Study.—

1. Italiya Juba by Radhanath Raya.
2. Iswara Chendra Bidyasagar by Brojobandhu Das.

History of Language and Literature.—

1. Utkala Sahitya ra Itihasa by T. C. Rath.
2. Utkala Bhasha ra Itihasa by B. Misra.

PART III—GROUP (v).

Classical Poetry.—

1. Koti Brahmanda Sundari by Upendra Bhanja—Cantos 4—10.
2. Bidagdha Chintamony—Cantos 5—10.

Modern Poetry.—

1. Pranayini by Neelakantha Das.
2. The following selections from the works of Madhusudan Roy:—
 - (a) Rushi Prane Debabatarana.
 - (b) Jeevana Chinta.
 - (c) Dhvani.
 - (d) Udbodhana.
 - (e) Nadi Prati.

Prose.—

1. Konarka by Krupasindhu Misra.
2. Bibeki by Radhanath Roy.

Drama.—

1. Kalapahada by A. Ghose.
2. Mudra Rakhyasa by M. Rath

Puranic Poetry.—

1. Ramayana—Sundarakanda by K. C. Patnaik.
2. Bhagavata—Navama Skandha by Jaganath Das.

Books for consultation.—

1. Utkala Sahitya ra Itihasa by B. Misra.
2. Utkala Bhasha Tatwa by G. Nanda.
3. Comparative Grammar of Gaurian Languages by Hoernle.

HISTORY—GROUP (V): RELATED SUBJECT.

Books prescribed.—

1. Prachina Utkala by Jagabandhu Simh.
2. Utkala Itihasa by Krupasindhu Misra.
3. W. W. Hunter's History of Orissa, Vol. II, Pages 1—173.

Books recommended for consultation.—

1. Orissa in the Making by Bijaya Chendra Muzumdar, published by the Calcutta University.
2. Introductory Essays in the B. C. Muzumdar's Typical Selections from Oriya Literature—Three Volumes, published by the Calcutta University.

HINDI.

1938.

PART II.

For Detailed Study.—

Poetry.—

Hindi Final Reader, Revised Edition (1933), Poems of Kabir, Surdas, Mirabai, Tulsidas, Rahim, Beharilal, Matiram, Deydutt, Barind, and Girdher. (Publishers: Agarwal Bros., Allahabad.)

or

Padya-Parijat—(edited by Keshava Prasad and Pitambar Datt, published by Nagri—Pracharini Sabha—Benares). Poems of Kabir, Tulsidas, Rahim, Beharilal, Harischander, Jayashanker Prasad, Suryakant Tripathi.

**454 TEXT-BOOKS IN HINDI, LATIN AND FRENCH [APP.
FOR B.A. DEGREE EXAMINATION, 1938.**

Prose.—

Hindi Nibandha Mala, Vol. I, by Shyam Sundar Das
Edition of Vikram 1989. (Nagari Pracharini Sabha).

Drama.—

Chandrasah by B. Maitli Saran Gupta, published by
Sahitya Sadan, Chirgaon, Jhansi, U. P.

For Non-detailed Study.—

1. Jai Shankar Prasad: Kankal—Published by Hindi Pusthaka Agency, Calcutta.
2. Charitra Chintan by Chabinath Pandey—Published by Hindi Pusthaka Agency, Calcutta.
3. Budha Dev by Babu J. Mohan Varma (Indian Press, Ltd., Allahabad).

For History of Language and Literature.—

1. Samkshipta Hindi Vyakaran by Pandit Kampta Prasad Guru, published by the Indian Press, Ltd., Allahabad.
2. Rachara Chandradaya by Ramlochan Sharam, published by Hindi Pustak Bhandar, Darbhanga.
3. Keay's History of Hindi Literature.
4. Sketch of Hindi Literature.
5. Mishrabandhu Vinoda, Vol. I, Introduction.

LATIN.

1938.

PART II.

Vergil: Georgics I, Eclogues I, IV, VI and VIII.

Horace: Odes I, 1-30.

Cicero: Pro Milone.

Tacitus: Annals I.

PART III—GROUP (v).

Text-books will be prescribed, if required.

FRENCH.

1938.

PART II.

Eckmann Chatrian. Le Blocus by A. R. Ropes (Pitt Press).

Molière: Le misanthrope.

Pierre Loti: Pêcheur d'Islande. (Oxford University Press).

Bornier: La fille de Roland (Dent.).

PART III—GROUP (v).

Corneille: Horace.

Moliere: L'Avare.

Oxford Book of French Verse (13th Century to the 20th Century). Selections from Pierre Corneille (No. 146) to the end of the book.

René Bazin: Les Noëllet (Calmann-Levy, 3, Rue Auber, Paris).

La Bruyère: Les Caractères (Nelson, 25, Rue Denfert Rocherau, Paris).

Thierry: Les Normands en Angleterre.

or

La France: Son Histoire, Sa Civilisation by Profs. E. C. Hills and Mathurin Dondo (Harrap).

For History of Language and Literature the following books are recommended for consultation,—

*Ch. Desgranges: Histoire illustrée de la littérature française (Hatier, Paris).

A. Darmesteter: Cours de grammaire historique de la langue française.

F. Brunot, Précis de grammaire historique de la langue française (new edition, 1933).

A. Dauzat: Histoire de la langue française.

A Darmesteter: A Historical French Grammar (Macmillan).

N.B.—All the above books may be ordered through Blackwell, Oxford.

Related Subject—Modern European History—France in the 17th Century—Cambridge Modern History, Vol. V, Chapters I, II, III and XIV.

GERMAN.

1938.

PART II.

Goethe: Iphigenie in Tauris.

A book of German Verse, Ed. by H. G. Fiedler, Nos. 61-75, 80, 81.

Freytag: Soll und Haben. Abridged edition by G. T. Files.

PART III—GROUP (v).

Oxford Book of German Verse.

Goethe: Iphigenie auf Tauris.

Geschichte der deutschen Dichtung. By Dr. Hans. Rohl.
Teubner, Leipzig and Berlin.

Volk auf dem wege. By Josef Ponten. (Blackwell, Oxford).

Schiller: Geschichte des dreissigjährigen Kriegs III.
(Abridged Ed.). K. Breul, Published by the
Cambridge University Press.

Cognate Subject:—

The History of Germany in the Nineteenth Century.

Text-book:—

The Unification of Germany, by Colonel Malleson.

or

The Cambridge Modern History, Vol. XI, Chapters III, VI,
VII, XV and XVI.

ARABIC.

1938.

PART II.

Prose and Poetry.—

Nafhatul Yaman.

Surah-i-Yusuf.

Grammar, etc.—

Thatcher's Arabic Grammar.

History of Arabic Literature.—

Arabic Literature in the first two centuries of Islam.

PART III—GROUP (v).

Prose.—

Khulasatu—Tarikh-i-Adabil—Lughatil—Arabiyyah by Jurji
Zaydan.

Maqamat—by Badi 'uzzaman—First Seven maqamat.

Surahs—Taha and Al-Mulk.

Poetry.—

Diwan-i-Mutanabbi—Radif Alif.

Mu'allaqah by 'Amr bin Kulsum.

'Azra-i-Quraysh.

Books recommended for Grammar and History of Literature.—

1. Palmer's Arabic Grammar excluding Prosody.

2. Majmu'ul Adab, by Al 'yaziji for Rhetoric and Prosody.

3. Literary History of the Arabs by Nicholson.

Related Subject.—

The Arab Conquest and Rule in Spain.

PERSIAN.

1938.

PART II.

Prose and Drama.—

Wukala-i-Murafa'ah.

Anwar-i-Suhayli, Chaps. I and II.

Akhlaq-i-Muhsini, First 30 Chapters.

Poetry.—

Naseem-i-Shimal, Part II, pages 50 to 137.

Nal Daman-Fayzi.

Grammar etc.—

Misbahul Qawa'id.

History of Persian Literature.—

Development of Persian Literature in India.

PART III—GROUP (v).

Prose and Drama.—

Nathrah.

Mard-i-Khasis.

Dam Gustran.

Qissa-i-Haji Baba Isfahani, first half,

Poetry.—

Shi'rah.

Javid Nameh.

Diwan-i-Ghalib-Radif Alif and Mim.

The following books are recommended for Grammar, etc.—

1. Platt's Persian Grammar.
2. Kanzul Balaghat.
3. Literary History of Persia—Four volumes.

Related subject.—

The Arab Conquest and Rule in Spain.

URDU.

1938.

PART II.

Prose.—

Maqalat-i-Hali.

Parda-i-Ghaflat.

Poetry.—

Bangi-i-Dira, excluding poems intended for children as well as the following longer poems of Iqbal:—

1. Taswir-i-Dard.
2. Shikwa.
3. Shama'wa Shai'r.
4. Javab-i-Shikwa.
5. Walidai Marhumah Ki Yad Men.
6. Khizar-i-Rah.
7. Tuloo'i Islam.

Non-detailed Study.—

Mashraqi Tamaddun Ka Akhri Namoonah by Sharaf.

Grammar.—

Asas-i-Urdu.

History of Literature.—

Development of Prose after 1858.

III] TEXT-BOOKS IN URDU AND HEBREW FOR B.A. 459
DEGREE EXAMINATION, 1938.

PART III—GROUP (v).

Prose.—

Mazamin-i-Chakbast.
Hamari-Sha'iri.
Muhsanath.
Faust.

Poetry.—

Diwan-i-Ghalib Radifs, Noon, Waw and Ya.
Diwan-i-Bedar.
Yadgari Naseem by Asghar.
Subhi-Watan by Chakbast.

The following poems of Iqbal:—

Taswir-i-Dard.
Shikwa and Javab-i-Shikwa.
Shama' wa Sha'ir.
Khizar-i-Rah.
• Tuloo-i-Islam.

Books recommended for Grammar, etc.—

Qwa'idi-Urdu by Abdul Haq.
Tarikh-i-Adabi-Urdu.
Tashilul-Balaghat.

Related Subject.—

Muslim Period 1526 to 1707.

Note:—The above books can be had from the Islamiyah Book Depot, Kurnool.

HEBREW.

1938.

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PART II.

Micha (Old Testament).

Joel "

Ruth "

First Book of Samuel.

History of the Hebrew Language.

Grammar.—

The following books are recommended:—

1. Hebrew Grammar by Davidson.
2. Hebrew Syntax by Davidson.
3. Hebrew Tenses by S. R. Driver.

PART III—GROUP (v).

1. Deuteronomy, Chapters 1 to 12.
2. Book of Esther.
3. Proverbs 1 to 15.
4. Mishna Tract Aboth, Chapters 1 and 2.
5. History of the Hebrew Literature.
6. Torah Leshan by David Yellin.
7. History of the Jews, Gratz (Nazin & Co., England.)

Grammar.—

The same as for Part II.

TAMIL.

1938.

PART II.

Poetry.—

(*Selections published by the University of Madras).

1. Kalittokai—102 lines.
2. Tirukkural—200 lines.
3. Chintamani—Namakal-ilambakam — 304 lines.
4. Perumpanaruppadai—500 lines.
5. Kambaramayanam, Iraniyanvadhaippadalam, 60 stanzas—240 lines.
6. Tiruvarangak-kalambakam, 10 stanzas—80 lines.
7. Fariya-puranam, Tirukkuripputtonda Nayanar Puranam, 60 stanzas—240 lines.

Prose.—*Detailed Study.*—

1. Suriyan by E. T. Rajeswari Ammal, M.A., L.T., Queen Mary's College, Madras.
2. Tiruvalluvar by T. Chelvakesavaraya Mudaliar, M.A., (T. P. Alagan, Perambur, Madras).

Drama.—

Satya-vijayam (Drama) by Valkudai Venkatarama Sastriyar.
(The Little Flower Co., Book-Sellers, Post Box 99,
Madras).

*Copies available with Messrs. E. M. Gopalakrishna Kone,
158-A, Broadway, Madras.

Prose.—

Non-detailed Study.—

1. Jagadish Chandra Bose. (The Saiva Siddhanta Works Publishing Society, 6, Coral Merchant Street, George Town, Madras).
2. Pattinattar-parattiya-muvar by Nilambikai Amma, St. Appar Vilas, Perumal North Car Street, Palamcottah.

PART III—GROUP (v).

(*University B.A. Selections, Volume I.*)

Poetry.—

1. Perumpanarppadai.
2. Kalittokai.
3. Purananuru, pages 97—126.
4. Tirukkural, Chapters 1—10.
5. Manimekalai, pages 302—322.

(*University B.A. Selections, Volume II.*)

6. Kambaramayanam, Ayodhya-kandam.
7. Tiruttondar Puranam, Karaikkalammai.
8. Tirukkovaaiyar.

Prose.—

1. Tamil-varalaru by K. S. Srinivasa Pillai, Parts I and II.
2. Parana by V. Venkatarajulu Reddiyar. (University Publication—C. Coomaraswami Naidu and Sons, G. T., Madras).

Grammar.—

Nannul: Sankaranamacchivayappulavar Urai. (Whole of the two sections Orthography and Etymology).

Yappilakkana Vina-vidai by Visakaperumal Ayyar. (Ripon Press, Madras.)

• TELUGU.

1938.

PART II.

Poetry (Old).—

1. Bharatam—Tikkana—Asramavasa Parvamu. Canto I, 185 verses.
2. Kumarasambhavam by Nannechodadeva. (Published by the Manager, S. V. V. Press, Vizianagram). Canto II.
3. Kasikhandamu by Sreenadha, Canto III.
4. Prabhavati Pradyumnam by Pingali Suranarya, Cantos I & II.
5. Kakutstha Vijayamu by Matla Ananta Bhupala, Canto III, 1—163 verses.

Poetry (Modern).—

6. Swapnanubhuti—by Durbha Ramamurti, M.A., Nellore.
7. Rutusamharam—by G. Subrahmanyam, "Andhra Patrika" Office, Madras.

Drama.—

8. Iiamsavijayam by Sreemati K. Kanakamma Garu, Queen Mary's College, Madras.
9. Karpuramanjari by Sreemati R. Subbamma, Rajahmundry.

Prose.—

10. Sahityatattvavimarsanam—by Jonnalagadda Satyanarayanamurti M.A., "Andhra Patrika" Office, Madras.
11. Bharatavachanam (pages 1—128) by Kaluve Veeraraju—Edited by N. K. Venkatesam, M.A., L.T., Ceded Districts College, Anantapur.

Non-detailed.—

12. Prachinavidyapeethamulu—by Dr. C. Narayana Rao, M.A., Ph.D., Ceded Districts College, Anantapur.
13. Ekaveera—by Viswanadha Satyanarayana, M.A., Masulipatam.

Grammar.—

14. Balavyakaranamu.

PART III—GROUP (v).

Poetry (Old).—

1. Kalapurnodayam—Canto IV, verses 1—151.
2. Raghava Pandaviyamu with Kavibhavaprakasika, Canto IV.
3. Amuktamalyada—Canto VI—Verses 1—66.
4. Nilasundariparinayamu—by Kuchimanchi Timmakavi.

Poetry (Modern).—

- Soundaranandamu—by P. Lakshmikantam, University College of Arts, Waltair.
- Kamavilasamu—by S. V. Sastri, Telugu Lecturer, Nizam's College, Hyderabad.

Drama.—

Ascharyachudamani—by M. Viswanatha Sarma, M. R. College, Vizianagram.

Uttararamacharita—by Malladi Suryanarayana Sastri, University College of Arts, Waltair.

Prose.—

Nayapradeepam—1—30 with commentary—by Vidvan D. V. Krishnamurti, M.A., Lecturer in Telugu, Theosophical College, Madanapalli.

Saraswatopanyasamulu—by R. Anantakrishna Sarma, Mysore.

Amaravati Stupamulu—by M. Somasekhara Sarma, Purasawalkam, Madras.

Inscriptions.—

Sasanapadyamanjari—1 to 10 Sasanas—edited by J. Ramayya Pantulu Garu, Telugu Academy Office, Cocanada.

Literary Criticism.—

Sahitya Tattva Vimarsanam—by J. Satyanarayanamurti, M.A., "Andhra Patrika" Office, Madras.

Andhrabharata Kavita vimarsanam—Chapters 3 and 4—by K. Ramakrishniah, M.A., 28, Singarachari Street, Triplicane, Madras.

History of Language and Literature.—

1. Bhashotpatti Kramamu—by K. Ramakrishniah.

2. Introduction to Dravidian Philology by Dr. C. Narayana Rao, Ceded Districts College, Anantapur.

3. Dravida Bhashalu—by G. J. Somayaji, University College, Waltair.

4. Andhra Vangmaya Charitra Sangrahamu—by B. Appa Rao, (Vavilla Ramaswami Sastrulu & Sons, Madras).

Grammar, Prosody and Poetics.—

1. Balavyakaranamu.

2. Praudhavyakaranamu.

3. Appakaviyam, Cantos III and IV.

4. Narasabhupaliyam.

5. Dasarupakanu—by Mallady Suryanarayana Sastri, Telugu Pandit, College of Arts, Waltair.

6. Chandas Sastramu—by T. Rajagopala Rao, Christian College, Madras.

KANNADA.

1938.

PART II.

*For Detailed Study.—**Poetry.—*

1. Selections in Kannada for the B.A. Degree Examination published by the University of Madras, Chapter III (pages 61-80) of Volume II.
2. Kadambari Sangraha, 3rd Aswasa. (Mysore University Publication).

Prose.—

Ramaswamedha by Muddana. Chapters 15 and 16. (Kavya-kalanidhi Office, Mysore).

Drama.—

1. Mudrarakshasa by N. Ramasesha Sastri, (Satya Sodhana Book Depot, Fort, Bangalore).
2. Raktakshi by K. V. Puttappa. (Satya Sodhana Book Depot, Fort, Bangalore).

Modern Prose.—

1. Socrates na Koneya dinagalu (Last days of Socrates) by A.N. Murti Rao, M.A. (Mysore University Publication).
2. Karnataka Samskriti by Devudu Narasimha Sastry, M.A. (Satya Sodhana Book Depot, Fort, Bangalore).

Grammar.—

Kannada Kaipidi, Volume I. Portions pertaining to Grammar only. (Mysore University Publication).

History of Literature.—

Karnataka Kavicharite, Volume I, by R. Narasimhacharya. Introduction and poets of the 10th and 11th centuries. (Author, Malleswaram P.O., Bangalore).

For Non-detailed Study.—

1. Chatrapati Sivaji by C. Vasudevayya. (Author, XI Cross Road, Malleswaram, Bangalore).
2. Raghunatha Simha by M. T. Vallabha Ayyangar. (Karnataka Hithaishini Office, Nanjangud).

PART II*—GROUP (v).

1. Pushpadanta Purana by Gunavarma, Aswasas 1, 2 and 3. (Madras University Publication).
2. Ramaswamedha by Muddana, Aswasas 1 to 7 (both inclusive), (Kavyakalanidhi Office, Mysore).
3. Visha Vriksha by B. Venkatachar (Viswa Karnataka Publishing House, Bangalore City).

4. Sakuntala Nataka by Basavappa Sastri (B. Mahadeva Sastri, Palace Vidvan, Kerlapur P. O., Hassan district).
5. Karnataka Kavi Charitre by Rao Bahadur R. Narasimha-charya, Vol. I. (Introduction and poets of the 11th and 12th Centuries), (Author, Malleswaram, Bangalore).
6. Sasana Padya Manjari by Rao Bahadur R. Narasimha-charya. (The Author, Malleswaram, Bangalore).
7. Kaviraja Marga (Madras University Publication).
8. Rasaratnakara by Salva (Madras University Publication).
9. Sabdamanidarpana by Kesi Raja (Basel Mission Book Depot, Mangalore).
10. Chhandassu by Nagavarma (Basel Mission Book Depot, Mangalore).
11. Tapobala by A. N. Narasimhaiya, M.A., L.T., Ph.D. (Satya Sodhana Book Depot, Fort, Bangalore).
12. Vimarshe, Parts I and II by M. Venkatesa Ayyangar, M.A., (Viswakarnataka Publishing House, Bangalore City).
13. Jeevana Soundarya and Sahitya by D. V. Gundappa, (Bala Sahitya Mandala, Mangalore).
14. Vritta Patrike by D. V. Gundappa. (Bala Sahitya Mandala, Mangalore).

MALAYALAM

1938.

PART II.

Non-detailed Study.—

1. Prabhandha Manjari by M. R. Balakrishna Warier, M.A., Science College, Trivandrum.
2. Pancasikha by Kunnath Janardhana Menon, (V. V. Publishing House, Trivandrum).

Detailed Study.—

Poetry.—

1. Rāmāyana Manjari—Bālakāṇḍam—by O. Sankaran Kutti Menon, (V. V. Press, Ernakulam).
2. Bharatam, Udyoga Parvam, by Ezuttaccan (Any Press).
3. Sahityamanjari, Part IV, by Vallathole, (Kalamandalam Office, Mulakunnathu Kavu, Cochin State.)
4. Kesaveeyam, 1 to 3 Sargams, by K. Kesava Pillai, (S. R. V. Press, Quilon).
5. Karuna by N. Kumaran Asan (Mrs. N. K. Asan, Sarada Book Depot, Trivandrum).

Drama.—

Uttararama Caritam by C. Chattukutti Mannadiar (Mangalodayam Press, Trichur).

Prose.—

1. Kavita Tattva Nirupanam by K. M. Panikkar, M.A., Bar.-at-Law, (B. V. Book Depot & Printing Works, Trivandrum).
2. Samudayolkarsham by Prof. A. Gopala Menon, M.A., B.Com., Arts College, Trivandrum.

PART III—GROUP (v).

Modern Poetry.—

1. Bharatam, Drona Parvam, by Ezuttaccan, (Any Press).
2. Nalacharitam Kathakali, II & III Day's plays by Unnayi Warriar.
3. Raghavabhyudayam, I to III Sargams by Vadakkankur Raja Raja Varma Raja, Vycome.
4. Chintavishtayaya Seeta by N. K. Asan (Sarada Book Depot, Trivandrum).

Drama.—

Janaki Parinayam by C. Chattukutti Mannadiar, (Mangalodayam Press, Trichur).

Prose.—

1. Martanda Varma by C. V. Raman Pillai (B. V. Book Depot, Trivandrum).
2. Vidyavivekam by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
3. Koottum Kootiyattavum by Ammaman Thampuran, B.A., B.L., Maharaja's College, Ernakulam.

Ancient Poetry.—

1. Ramacaritam, 1—5 Patalams.
2. Kannassa Rāmāyanam, Bālakandam, 1—96 Slokas. Edited by K. Parameswaran Pillai, Thampanoor, Trivandrum.
3. Krishna Gātha, from the beginning to the end of Pūtana Mōksham—By Cherusseri—Edited by P. K. Narayana Pillai, B.A., B.L., (S. R. V. Press, Quilon).
4. Bhāsha Naishadha Champu, edited by P. Padmanabha Menon, B.A., B.L., Vakil, Ernakulam.

RELATED SUBJECT.

DRAVIDIAN LANGUAGES.

Early South Indian History, the part prescribed in Chapters I—XVIII of the syllabus. (*Vide* pp. 437—441).

Text-Books for the B.A. Degree Examination, 1939.

ENGLISH.

1939.

Shakespeare.—

Antony and Cleopatra.

The Tempest.

Poetry.—

Selections as for 1938, viz.—

Milton: Lycidas.

Johnson: London.

Shelley: The Euganean Hills.

Arnold: Thyrsis.

Browning: Fra Lippo Lippi; Cleon.

Morris: Defence of Guenêvre.

Prose.—

Detailed study.—

Swift: Selections—Travellers' Library (Cape).

Landor: Selections—Ed. Welby (O.U.P.).

Treble: Literary Essays (University of London Press).

Non-detailed study.—

Disraeli: Sybil.

Galsworthy: Short Stories (Longmans).

Sarma: A Book of Indian Culture (Macmillan).

SANSKRIT.

1939.

PART II.

The same as for 1938 (*vide* p. 449).

• **PART III—GROUP (v).**

(*Main and Related Language and Related Subject*).

The same as for 1938 (*vide* p. 449).

MARATHI.

1939.

PART II.

The same as for 1938 (*vide* p. 450) with the change that "Indu Kale ani sarale Bhole by V. M. Joshi" should be substituted for "Maze Ramayan".

PART III—GROUP (v).

The same as for 1938 (*vide* p. 451).

ORIYA.

1939.

PART II.

The same as for 1938 (*Vide* p. 452).

PART III—GROUP (v).

The same as for 1938 (*Vide* p. 452).

HINDI.

1939.

PART II.

The same as for 1938 (*Vide* p. 453), except that for the detailed study in Poetry for which the following should be substituted:—

“Padya Pramoda” by Jagannatha Prasad Sarma, M.A.,
(Hindi Sahitya Kutir, Benares).

LATIN.

1939.

PART II.

The same as for 1938 (*Vide* p. 454).

PART III—GROUP (v).

Text-books will be prescribed, if required.

FRENCH

1939.

PART II.

The same as for 1938 (*Vide* p. 454).

PART III—GROUP (v).

Corneille: Horace.

Molière: L'Avare.

Oxford Book of French Verse (13th Century to the 20th Century). Selections from Pierre Corneille (No. 146) to the end of the book.

René Bazin: Les Noëlets (Calmann-Lévy, 3, Rue Auber, Paris).

La Bruyère: Les Caractères (Nelson, 25, Rue Denfert-Recher, Paris).

Thierry: Les Normands en Angleterre.

or

La France: Son Histoire, Sa Civilisation by Profs. E. C. Hills and Mathurin Dondos. (Harrap).

iii] TEXT-BOOKS IN FRENCH, GERMAN, ARABIC, 469
PERSIAN, URDU AND HEBREW FOR B.A. DEGREE
EXAMINATION, 1939.

FOR HISTORY OF LANGUAGE AND LITERATURE.

The following Books are recommended for consultation:—

Ch. Desgranges: *Histoire illustree de la litterature francaise*
Hatier, Paris.

A. Darmesteter: *Cours de grammaire historique de la*
langue francaise.

F. Brunot: *Précis de grammaire historique de la langue*
francaise (New Edition, 1933).

A. Dauzat: *Histoire de la langue francaise.*

Arsène Darmesteter: *A Historical French Grammar*
(Macmillan).

N.B.—All the above books may be ordered through
Blackwell, Oxford.

RELATED SUBJECT.

Modern European History—France in the 17th Century.

Cambridge Modern History, Vol. V, Chapters I, II, III
and XIV.

GERMAN.

1939.

PART II AND PART III—GROUP (v).

The same as for 1938 (*Vide* pp. 455—456).

ARABIC.

1939.

PART II AND PART III—GROUP (v).

The same as for 1938 (*Vide* p. 456).

PERSIAN.

1939.

PART II AND PART III—GROUP (v).

The same as for 1938 (*Vide* p. 457).

URDU.

1939.

PART II AND PART III—GROUP (v).

The same as for 1938 (*Vide* pp. 458—459).

HEBREW.

1939.

PART II AND PART III—GROUP (v).

The same as for 1938 (*Vide* pp. 459—460).

SYRIAC.

1939.

PART II.

1. The Book of Ruth.
2. Epistle of St. Paul to the Ephesians.
3. The Story of St. Ephrem—Acts of Martyrs and Saints.
Vol. III, Pages 665 to 679. (Edited Bedjan, Paris).
4. Breviary of the Jacobites for Wednesday.
5. Breviary of the Syro-Malabar Catholics for Wednesday.
6. History of Syriac Literature—Wright.

Grammar.—

7. Compendious Syriac Grammar—Noldeke.

PART III—GROUP (v).

Prose.—

1. The Book of Esther.
2. Epistle of St. Paul to the Romans.
3. Magnatis. Verse I. Pages 49 to 82, (printed at
Puthenpally Seminary, 1910.)

Poetry.—Selections:—

1. Ebedjesu—About the Dissolution of this Universe—
Syriac Grammar and Chrestomathy of Dr. Gismondi.
(Edited Rome).
2. Cyril—On the Last Paschal Supper of Christ, Dr.
Gismondi, (Pages 111 to 112).
3. Narses the Leper—On John the Baptist, Dr. Gismondi,
(Pages 103 to 110).
4. Mar Isahac of Antioch.—Exhortation on the frequent
communion with God—of Dr. Gismondi. (Pages 99 to
100).

TAMIL.

1939.

Poetry.—

(Selections to be published by the University).

1. Nāṟṟinai—60 lines.
2. Tirukkural, Chapters 91 to 100—200 lines.
3. Chintamani: Govindaiyar-ilambakam—200 lines.
4. Pattinattadigal Tirukkalumalamunimanikkovai, stanzas
1 to 6—75 lines.
5. Tirumangaiyalvar, Kalicci amavinnagaram—40 lines.
6. Tiruṇanasambandhar Tevaram, Tirukkalumalam. Megha-
ragak-kurinji—44 lines.

- | | |
|---|------------------------|
| 7. Pamban Kumaragurudasasvamigal-prabandham—40 lines. | |
| 8. Periyapuranam, Tiruvarur-cirappu—200 lines. | } Portion as for 1938. |
| 9. Perumpanarppadai—500 lines. | |
| 10. Kambaramayanam, Iraniyanvadaip-padalam, 60 stanzas—240 lines. | |
| 11. Tiruvarangak-kalambakam, 10 stanzas—80 lines. | |

Prose.—

Detailed Study.—

J. Raju Mudaliyar: Amarasingavijayam. (C. Coomaraswami Naidu & Sons, Madras).

Non-detailed Study—

1. K. S. Kannuswami Pillai: Luther Burbank (The Saiva Siddhanta Works Publishing Society, 6, Coral Merchant Street, Madras).
2. Dr. P. J. Thomas: Velanmaik-kadan (D. M. Udaiyar, 48-B, First Street, Pudupet, Mount Road P.O., Madras).

Drama—

V. G. Suryanarayana Sastri: Mana-vijayam (V. S. Swaminathan, Book-seller, Madura).

PART III—GROUP (v).

The same as for 1938 (*Vide* p. 461).

TELUGU.

1939.

PART II.

Poetry (Old)—

Bharatam by Tikkana—Sauptikaparvam—Aswasa II.

Nrisimhapuranani by Yerrapreggada—Praladacharitam.

Haravilasam by Sreenadha; Kiratarjuneeyakatha.

Vishnumayanatakam by Radhamadhava Kavi, Canto III, (Madras University Publication).

Vasucharitram, Canto II.

Poetry (Modern)—

Soundaryamanjari by K. Gopala Rao, Teacher's College, Saidapet.

DEGREE EXAMINATION, 1939.

Drama—

Kamalakalyanam by Rajah P. Parthasarathi Rayaningar, Kalahasti.

Venisamharam by Vaddadi Subbarayudu Garu, Rajahmundry.

Prose—

Saraswatopanyasamulu by R. Anantakrishna Sarma, Mysore.

Parasuramavijayamu by K. Ramachandra Kavi (to be had of K. Ramakrishniah, 28, Singarachari Street, Triplicane, Madras.

Prachinahindava Prajaswamika Prabhutvamu by D. I. Narasimham, M.A., L.T., Ceded Districts College, Anantapur.

Non-detailed.—

Atmakatha by Veluri Sivarama Sastri, Vol. I.—“Andhra Patrika” Office, Madras.

Grammar—

Balavyakaranamu.

PART III—GROUP (v).

The same as for 1938 (*Vide* p. 462).

KANNADA.

1939.

PART II.

*For Detailed Study.—**Poetry.—*

1. Jagannatha Vijaya by Rudrabhatta. Aswasa XII. Mysore Oriental Library Edition (Government Oriental Library, Mysore).
2. Kadambari Sangraha—4th Aswasa. (Mysore University Publication).

Prose—

Ramaswamedha by Muddana. Chapters I, 2, and 3. (Kavya Kalanidhi Office, Mysore).

Drama—

1. Mricchakatika Nataka by N. Subba Sastri. (Satya Sodhana Book Depot, Fort, Bangalore).
2. Nachiketha by C. K. Venkataramayya, M.A., LL.B., (Satya Sodhana Book Depot, Fort, Bangalore).

Modern Prose.—

1. Jeevana Soundarya and Sahitya, by D. V. Gundappa. (Bala Sahitya Mandala, Mangalore).
2. Sri Krishna Charitamrita by Atmarama Sastri. (Bala Sahitya Mandala, Mangalore).

Grammar.—

Kannada Kaipidi, Volume I. Portions pertaining to Grammar. (Mysore University Publication).

History of Literature.—

Karnataka Kavicharite, Volume I, by R. Narasimhacharya—
Introduction and poets of the 12th Century (Author,
Malleswaram P.O., Bangalore).

For Non-detailed Study.—

1. Life of Sri Ramakrishna Paramahansa, by K. V. Puttappa. (Mysore University Publication).
2. Mayavi by M. V. Sastri. (Satya Sodhana Book Depot, Fort, Bangalore).

PART III—GROUP (v).

The same as for 1938 (*Vide* p. 464).

MALAYALAM.

1939.

PART II.

Non detailed Study.—

1. Chandraguptan by Prof. K. Mamen, B.A. (Hons.) (E. M. Gopalakrishna Kone, Madras and Madura).
2. Durgesa Nandini—C. S. Subrahmanyam Poti, M.A. (C/o V. V. Publishing House, Trivandrum).

Detailed Study.—

Poetry—

1. Krshnagatha by Cerusseri—from the beginning to the end of Putana Moksham.
2. Bharatam, Bheeshma Parvam — by Ezuttaccan — (any Press).
3. Vetala Caritam—2nd and 3rd stories—by K. Raghava Pisharoti. (Malayalam Improvement Committee, Trichur).
4. Mayura Sandesam—Purvasandesam by Kerala Varma Valia Koil Thampuran. (B. V. Book Depot and Printing Works, Trivandrum).
5. Karuna—by Kumaran Asan. (Sarada Book Depot, Trivandrum).
6. Citrayogam, First two Sargams, by Vallathole.

Kathakali—Nalacharitham—Attakatha 1st day's play.

Prose—

1. Prasangatarangini, Part III by P. K. Narayana Pillai, B.A., B.L., (S. R. V. Press, Quilon).
2. Bhutarayar by Appan Thampuran, Ayyanthole Palace, Trichur.

PART III—GROUP (v).

The same as for 1938 (*Vide* p. 466).

Text-books for the B.A. Degree Examination, 1940.

ENGLISH.

1940.

(Text-books will be prescribed later).

SANSKRIT.

1940.

PART II.

Same as for 1939 (*Vide* page 467) with the change that the *Śiṣupālaradha* should be replaced by "*the Mahābhārata condensed*"—the *Vana* and *Virāta Parvas*—to be had of Messrs. G. A. Natesan & Co., Madras.

PART III—GROUP (v).

The same as for 1939 (*Vide* p. 467).

MARATHI.

1940.

PART II.

***Non-detailed study.*—**

Gadya Samuchchaya by N. C. Kelkar.

***Detailed study.*—**

***Prose.*—**

1. Nagarika Niti by S. V. Punatambekar.
2. Ulka by V. S. Khandekar.

***Poetry.*—**

Jyaneshwari, Chapter III.

Karna Parva by Moropant, Chapters 19 to 26 (both inclusive).

***Drama.*—**

Totayache Banda by N. C. Kelkar.

***Grammar and Prosody.*—**

1. With reference to the Texts.
2. Sulabha Alankar by R. B. Joshi.

***History of Language and Literature.*—**

The same as for 1939, viz.—

1. Maharashtra Sarasvat: Part I—3rd Edition by Bhawe, Pages 1-22 and 114-140; Part II, pages 49-72 and 207-246.
2. Bhasha Sastra ani Marathi Bhasha by K. P. Kulkarni—Chapters X, XI and XII.

III] TEXT-BOOKS IN MARATHI, ORIYA, HINDI AND 475
LATIN FOR B.A. DEGREE EXAMINATION, 1940.

PART III—GROUP (v).

Prose.—

1. Nagarika Niti by S. B. Punatambekar.
2. Jivankala by S. V. Khandekar.
3. Nivadak Lekha: by N. G. Chapekar pp. 1 to 200.
4. Life of V. K. Chiplunker by Madholker and Banahatti.

Poetry.—

1. Niti and Vairagya Shataka by Vaman Pandit.
2. Damayanti Swayamvar by A. K. Priyolker.
3. Moropant's Krishnavijaya: Chapters 60 to 68 (both inclusive).
4. Jyaneswari, Chapter IV.

Drama.—

"Ekacha Pyala" by Gadkeri.

ORIYA.

1940.

PART II.

The same as for 1939, (*Vide* p. 468) with the following change:—

Substitute Kalapahada by A. Ghosh for Prakruta Pranaya Natak by R. R. Deo.

PART III—GROUP (v).

The same as for 1939 (*Vide* p. 468).

HINDI.

1940.

PART II.

Same as for 1939 (*Vide* page 468) except that for detailed study in Drama *substitute*:—

Babu Harischandra Satya Harischandra—(Ganga Pustak Mala Karyalaya, Lucknow).

LATIN.

1940.

PART II.

Vergil: Georgics I, Eclogues, I, IV, VI and VIII.

Tacitus: Annals I.

Horace: Odes, Book III—1 to 21.

Cicero: Tuscul, Disputations, Book I (Cambridge University Press).

PART III—GROUP (v).

Text-books will be prescribed, if required.

FRENCH.

1940.

PART II.

C. Farrere: *l'Inde Perdue*. Flammarion, Paris.

Corneille: *Horace*.

Loti: *Pêcheurs d'Islande* (Oxford University Press).

Borner: *La fille de Roland* (Dent).

PART III—GROUP (v).

The same as for 1939 (*Vide* p. 468).

GERMAN.

1940.

PART II.

Goethe. *Iphigenie in Tauris*.

Freytag: *Soll und Haben* (Abridged, Edit. by G. T. Files).

H. G. Fielder: *Book of German Verse*: Nos. 61, 75, 80, 81.
(O. Clarendon Press).

PART III—GROUP (v).

The same as for 1939 (*Vide* p. 469).

ARABIC.

1940.

PART II.

Prose and Poetry.—

Majani-ul-Adab, Vol. II.

Surah-i-Yusuf.

Grammar, etc.—

Thatcher's Arabic Grammar.

History of Arabic Literature.—

Arabic Literature in the first two Centuries of Islam
(History of Arabic Literature—Prof. Gibb).

PART III—GROUP (v).

Prose.—

Khulasatu-Tarikh-i-Adabil Lughatil Arabiyya—Zaidan.

Maqamat of Al Hariri—First five Maqamat.

Surah-Al A'raf.

Poetry.—

Diwan-i-Mutanabbi—Radif Alif.

Muallaqah—Amrbin Kulsoom.

Non-detailed Study.—

Alinquilabul Usmani.

III] TEXT-BOOKS IN ARABIC, PERSIAN AND URDU 477
FOR B.A. DEGREE EXAMINATION, 1940.

Books recommended for Grammar and History of Literature.—

Palmer's Arabic Grammar excluding Prosody.

Majmu'ul Adab—Al'yaziji for Rhetoric and Prosody.

Literary History of the Arabs by Nicholson with special reference to the Ummayyad Period.

Related Subject.—

Moors in Spain—Stanley Lanepole.

PERSIAN.

1940.

PART II.

Prose.—

Wukula-i-Murafa'ah.

Siyahat-nameh Ibrahim Beg—upto Ijmal-i-Siyahat-i-Qazwin.

Poetry.—

The Poets of the Pahlavi Regime—J. Dinshaw.
Nal Daman—Faizi.

Grammar, etc.—

Misbahul Qawa'id.

History of Persian Literature.—

Literary History of Persia—Browne (with special reference to the Safawi Period).

PART III—GROUP (v).

Prose and Drama.—

Nathra.

Dam Gustran.

Qissa-i-Haji Baba Isfahani—First half.

Sarguzasht-e-Hakim Nabatat.

Poetry.—

Shi'rah.

Javid Nameh—Iqbal.

Diwan-i-Galib—Radif Alif and Mim.

The following books are recommended for Grammar, etc.—

Platt's Persian Grammar.

Kanzul Balaghat.

Literary History of Persia—4 Vols.

Related Subject.—

Moors in Spain—Stanley Lanepole.

URDU.

1940.

PART II.

Prose.—

Mazamin-e-Hali.

Poetry.—

Kulliyat-i-Akbar, Part III.

Qasayid-i-Momin.

**478 TEXT-BOOKS IN URDU AND HEBREW FOR B.A. [APP.
DEGREE EXAMINATION, 1940.**

***Drama.*—**

Drama Akbar by Azad.

***Non-detailed.*—**

Ayyam-i-Arab.

***History of Literature.*—**

The Development of Prose after 1858.

PART III—GROUP (v).

***Prose.*—**

U'de Hindi.

Muqaddima-i-Shir O Shayiri.

A'yama.

Faust.

***Poetry.*—**

Muntakabat-i-Ghalib.

Diwan-i-Athar Dihlawi.

Masnavi Mir Hassan.

Subhi Watan-Chakbast.

The following poems of Iqbal—
Shikwah.

Jawab-i-Shikwah.

Taswir-i-Dard.

Sham'wo Sha'ir.

Khizr-i-Rah.

Tului-Islam.

***Books recommended for Grammar, etc.*—**

Qawa'id-i-Urdu—Abdul Huq.

Tarikh-i-Adab-i-Urdu.

Tashilul Balaghat.

***Related Subject.*—**

From 1526—1707.

HEBREW.

1940.

PART II.

Books of Amos, Joel, Ruth and Samuel, Book I. (Old Testament).

***Grammar:*—**

Davidson's Hebrew Grammar.

Hebrew Tenses by Driver.

PART III—GROUP (v).

Deuteronomy, Chapters 1—12. Books of Esther, Proverbs
1—15. Mishna.—Tract Aboth, Chapters 1—3.

History of Hebrew Literature.

Thorath Hallashon by Yellin.

History of the Jews—Gratz (Nazin & Co., England).

Davidson's Hebrew Grammar.
Hebrew Syntax by Davidson.
Hebrew Tenses by S. R. Driver.

1940.

(Text-books will be prescribed later).

1940.

PART II.

Selections to be published by the University of Madras.

- | | |
|---|---------------------|
| 1. Nārrinai—60 lines. | } Same as for 1939. |
| 2. Tirukkural—200 lines | |
| 3. Sivaka-chintamani—200 lines. | |
| 4. Pattinappalai—301 lines. | |
| 5. Kambar: Rāvanan Mandirappadalam—400 lines. | |
| 6. Tevaram: Tirujñanasambandar—44 lines. | |
| 7. Periya-tirumozhi: Tirumangai Alvar—40 lines. | |
| 8. Pattinattuppillaiyar: Koil-Nannani-Malai—50 lines. | |
| 9. Periyapurānam: Kānappa Nayanar (Pirapakuti)—200 lines. | |
| 10. Silappadikaram, Kadaladukadai—174 lines. | |
| 11. Vātpokkikkalambakam—10 verses. | |

Detailed Study.—

1. Merumandarar (V. Venkatarajulu Reddiyar).
2. Katturaikkalambakam (S. K. Ganapati Ayyar).

1. Life of Dr. Caldwell (R. P. Sethu Pillai).
2. Manikkavasagar (P. S. Acharya).

PART III.

Group V—Two Languages other than English.

1. Perumpanaruppadai.	}	University B.A. Selections, Vol. I.
2. Ainkurunuru		
3. Purananuru, p. 74—96		
4. Muttollayiram		
5. Tirukkural, Chapters 11—20		
6. Silappadikaram, p. 259—275		
7. Sundarakandam.	}	University B.A. Selections, Vol. II.
8. Tiruttondar-puranam: Tiru- nalaipovar.		
9. Tiruviruttam.		

Prose.—

1. Tamil Varalaru—K. Srinivasa Pillai, Parts I and II.
2. Kapilar—Madras University Publication.

Grammar.—

1. Nannul—Sankaranamacciavayar Urai.
2. Yappilakkanavinavidai by Visakaperumal Iyer.

TELUGU.

1940.

PART II.

Poetry (Old).—

1. Bharatam by Tikkana—Souptikaparvam, Aswasa II. (137 verses).
2. Vishnumayanatakam by Radhamadhava Kavi, Canto III (Madras University Publication) 366 verses.
3. Vasucharitram, Canto II—160 verses.

Poetry (Modern).

4. Andhra Bhaminivilasamu by Dantu Subbavadhani, Kavilaka Kutiram, Lloyd's Road, Madras.

Drama.—

5. Mudrarakshasamu by Tirupati Venkatakavulu, Kadiyam, East Godavary District.

Prose.—

6. Jagatkatha by K. Sathagopacharyulu, B.A., B.L., Vakil, Cocanada, pages 227—566.

Non-detailed Study.—

7. Vishnuguptudu by G. Radhakrishna Sastry, Nellore.
8. Pramadavanam by Venkataparvatiswara Kavulu, Andhra-pracharini Grandhamala, Cocanada.

PART III—(GROUP (v)).

The same as for 1939 (*Vide* p. 472).

KANNADA.

1940.

PART II.

Poetry.—

(The following portions from Volume II of the University B.A. Selections).

1. Chandraprabha-purana, Aswasas 9 and 10, Stanzas 1—251, including the intervening prose passages, pages 103 to 146, both inclusive.
2. Kabbigara Kava, stanzas 1—152 including the intervening prose passages, pages 147 to 17, both inclusive.
3. Kavya Sara, stanzas 1 to 115, pages 310 to 328, both inclusive.

Prose.—

Sri Ramaswamedha (as in Volume II of the University B.A. Selections, pages 354 to 398, both inclusive).

Drama.—

1. Sakuntala Nataka by Basappa Sastry (B. Mahadeva Sastry, Kerlapur P.O., Hassan District, Mysore State).
2. Mandodari by C. K. Venkataramayya, M.A., LL.B., (Satya Sodhana Book Depot, Fort, Bangalore City).

Modern Prose.—

1. Bhishma Charite by C. Vasudevayya, 331, Malleswaram P. O. Bangalore.
2. Mudra Manjusha by Kempu Narayana to the end of Nanda-niryana, Chapters 1 to 8, both inclusive (The Wesleyan Mission Press, Mysore).

Grammar. —

Kannada Kaipidi, Vol. I (Revised edition), Part I, portions relating to Grammar only. (Mysore University Publication).

History of Literature.—

Kavi Charite, Volume I (Revised edition by Rao Bahadur R. Narasimhacharya, Malleswaram, Bangalore, Introduction and poets of the 13th century, from Kavi Kama to Navilgundada Madiraja (both inclusive), pages 305 to 409.

Non detailed Study.—

1. Durgesa Nandini by B. Venkatacharya, (The Bangalore Press Book Depot, Krishna Buildings, Avenue Road, Bangalore City).
2. Karnataka-gata-vaibhava by Alur Venkata Rao of Dharwar, (Karnataka Sikshana Samiti, Dharwar).

PART III—GROUP (v).

The same as for 1939 (*Vide* p. 473).

MALAYALAM.

1940.

(Will be prescribed later).

482 TEXT-BOOKS IN ENGLISH FOR B.A. (HONS.) [APP.
PRELIMINARY, B.Sc. AND B.Sc. (HONS.), PART I,
EXAMINATIONS, 1938 AND 1939.

**B.A. (Hons.) Preliminary, B.Sc.—Part I, and
B.Sc. (Hons.) Degree—Part I, Examinations.**

ENGLISH.

1938.

Prose.—

Detailed Study.—

Stevenson—Selections—Ed. S. G. Dunn (Longmans).

Treble—Modern Literary Essays (University of London Press).

Non-detailed study.—

Thackeray: The Newcomes.

Burke by John Morley—Men of Letters Series (Macmillan).

Tagore: Lectures and other Addresses (Macmillan).

1939.

Prose.—

Detailed Study.—

Landor: Selections—Ed. Welby (O.U.P.).

Treble. Literary Essays (University of London Press).

Non-detailed Study.—

Disraeli: Sybil.

Galsworthy: Short Stories (Longmans).

Sarma: A Book of Indian Culture (Macmillan).

1940

(Text-books will be prescribed later)

APPENDIX IV.

B.A. (HONOURS) DEGREE EXAMINATION.

SYLLABUS.

Branch I—Mathematics.

The following is the list of subjects from which special subjects are to be selected under each of the divisions specified in (c) under Part II—I Mathematics—in Regulation 2 of Chapter XLI.

Note.—The Board of Studies may from time to time add to the list or exclude subjects from the list, either temporarily or permanently.

Two of the following subjects, at least one of which shall be from numbers 1 to 5:—

1. *Geometry*—

- (1) Advanced Projective Geometry.
- (2) Non-Euclidian Geometry.
- (3) Higher Plane Curves.
- (4) Differential Geometry.

2. *Algebra*—

- (1) Finite Groups and Substitutions.
- (2) Invariants.
- (3) Statistics including Probabilities and Errors of Observation.

3. *General Theory of Functions*—

- (1) Functions of real variables.
- (2) Theory of Uniform Functions of a complex variable and integral functions.
- (3) Function of a complex variable after Riemann including Riemann's surfaces.

4. *Differential Equations*—

- (1) Linear Differential Equations.
- (2) Partial Differential Equations.

5. *Special Functions*—

- (1) Elliptic Functions.
- (2) Functions of Harmonic Analysis.

6. Dynamics.

- (1) Advanced Rigid Dynamics.
- (2) Theoretical Dynamics.

7. The Potentials.

8. Elasticity.

9. Hydrodynamics and Sound.

- (1) Irrotational motion of Liquids.
- (2) Propagation of Sound in gases.

(1) GEOMETRY.

Including Pure Geometry and Analytical Geometry of two and three Dimensions:—

(a) Geometry of Two Dimensions.

The metrical properties of the point, the straight line, the circle, the parabola, the ellipse and the hyperbola treated by pure geometric methods, by means of Cartesian co-ordinates, polar co-ordinates and homogeneous co-ordinates (chiefly areal and trilinear).

Cross Ratios, Harmonic Section. Involution ranges and pencils. Perspective. Principle of duality. Reciprocation with respect to conics. Line Co-ordinates, application of tangential equations to conics. The method of projection, considered from the pure geometric point of view, its analytic basis. The principle of continuity, imaginary points and lines. Projective properties of conics. Simple geometric applications of invariants of conics.

(b) Geometry of Three Dimensions

The line, the plane and the regular solids treated by pure geometrical methods.

Analytical Geometry of three dimensions with Cartesian Co-ordinates.—The Straight line, the Plane, the Sphere, the Cone, the Quadrics, their plane sections and generating lines. Confocal Quadrics. The reduction of the general equation of the second degree.

A. Books for Study—

1. Askwith: Pure Geometry.
2. W. P. Milne: Projective Geometry.
3. Smith: Conic Sections.
4. Askwith: Analytical Geometry of the Conic Sections.

5. C. Smith: Solid Geometry.
6. R. J. T. Bell: Co-ordinate Geometry of three Dimensions.
7. Hall and Stevens: School Geometry, Part VI.
8. Nixon: Geometry in space.

B. Books for Reference—

1. C. V. Durell: Plane Geometry for Advanced Students.
2. J. W. Russell: Pure Geometry.
3. Milne: Homogeneous Co-ordinates.
4. Salmon: Conic Sections.
5. Frost: Solid Geometry.

(2) ALGEBRA AND THEORY OF EQUATIONS.

Inequalities and Limits. Convergence and divergence of Series and of Infinite Products. Binomial and Exponential Theorems. Logarithmic series. Summation of series. Continued fractions, simple and recurring; indeterminate equations. Theory of numbers. Elementary propositions in Probability. (Standard as in C. Smith's Algebra).

Theory of equations.—Relations between the roots and co-efficient. Symmetric functions of the roots, transformation of equations; binomial and reciprocal equations; properties of derived functions. Rolle's theorem. Location of the roots. Sturm's theorem. Algebraical solution of cubic and biquadratic equations: solution of numerical equations. Horner's method. Graphical solution of equations. Determinants and Elimination. (Standard as in Burnside and Panton).

(3) PLANE TRIGONOMETRY.

Fuller treatment of the B.A. Course. Properties of triangles and quadrilaterals. Complex Numbers. De Moivre's Theorem and Applications. Factorisation, Infinite series, convergence of complex series. The Power series. Trigonometrical expansions. Determination of π . Summation of Series. Elementary properties of hyperbolic functions. Convergency of Infinite Products. Expression for the sine and cosine as infinite products.

(Standard as in Loney's Trigonometry and treatment as in Hobson's Plane Trigonometry.)

(4) MATHEMATICAL ANALYSIS.

Including the differential and Integral Calculus and differential Equations:—

1. Preliminary

Irrational numbers, simple notions as to their genesis obtained from the intuitional properties of the straight line. The linear continuum. Infinite sequences, limiting points, upper and lower limits. General principle of convergence. General idea of a function of a real variable, the elementary functions and their graphical treatment. Limits of functions of a continuous variable, continuity of functions, properties of continuous functions. Inverse functions, proof of existence when original function is steadily increasing or decreasing.

2. Differential and Integral Calculus.

Functions of one real variable. Derivatives, general theorems and rules for differentiation, repeated differentiation, Leibnitz's theorem, general theorems concerning derivatives. Rolle's theorem, mean value theorem. Geometrical applications of derivatives. Integration as the operation inverse to differentiation, standard forms and processes of integration. The general mean value theorem of the differential calculus, applications to maxima and minima, to evaluation of limits, and to contact of plane curves. Envelopes, Curvature. Taylor's series, convergence of the standard Taylor series. Integration of bounded functions according to Riemann, integrability of continuous functions and monotonic functions, the fundamental theorem of the integral calculus. The first and second mean value theorems of the integral calculus. Functions defined by definite integrals, their continuity, differentiation and integration. Applications of definite integrals.

Functions of several real variables, continuity. Implicit functions, idea of their existence (without proof). Partial derivatives, differentiation of implicit functions and composite functions, Euler's theorem on homogeneous functions, Taylor's theorem for functions of several variables, simple applications to maxima and minima, and to the finding of singular points and asymptotes of algebraic curves. Double integrals, line integrals, surface integrals, and triple integrals—evaluation in simple cases. Green's theorem. Geometric applications of multiple integrals.

Simple instance of functions of a complex variable. Cauchy's theorem (proof by use of Green's theorem).

3. Infinite Series and Infinite Integrals.

Series of positive terms. Simpler tests of convergence. Series of positive and negative terms, Abel's and Dirichlet's

tests. Absolute convergence, effect of change of order of terms on sum. Absolutely convergent double series. Multiplication of absolutely convergent series.

Series of variable terms. Uniform convergence, Weierstrass's M-test, chief properties of uniformly convergent series as regards continuity, differentiation and integration. Fundamental properties of power series, standard power series. Fourier series of bounded functions with a finite number of maxima and minima and a finite number of discontinuities. Infinite products, the standard infinite products.

Infinite integrals. Functions defined by infinite integrals. Uniformly convergent integrals, their continuity, sufficient conditions for differentiating and integrating under the sign of integration, simple applications to the evaluation of infinite integrals.

4. Differential Equations.

(A) Ordinary Differential Equations involving two variables.—

Formation of differential equations, character of solutions, geometrical meaning of differential equations.

Equations of first order.—Variables separable, linear equation. Bernoulli's equation, homogeneous equation, one variable absent, $Mdx + Ndy = 0$, integrating factors and their discovery in the simpler cases. Equations of n th degree that can be resolved into component equations of 1st degree, equations solvable for x or for y , Clairaut's form. Singular solutions, the p - and c - \angle discriminants, geometric interpretation.

Linear equations with constant co-efficients; Euler's linear equations. Exact equations.

The equations $y(x) = f(x)$, $y(n) = f(y)$, $y(n) = f\{y(n-1)\}$, $y(n) = f\{y(n-1)\}$; Depression of order when one variable is absent.

Equations of second order.—The complete solution in terms of known integral relation between integrals.

Geometric applications; finding of curves with given properties; trajectories.

(B) Ordinary Differential Equations involving more than two variables :—

Simultaneous linear differential equations, the equation $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$ and its geometrical interpretation. Total differential equations (with three variables), the condition of integrability, geometric interpretation of the equation and its solution.

(C) *Partial Differential Equations*:—

Their derivation, classification of integrals of a partial differential equation, geometric interpretation. Lagrange's equation $Pp + Qq = R$, Charpit's method. The standard forms $\psi(p, q) = 0$, $\psi(z, p, q) = 0$, $\phi(x, p) = \psi(y, q)$ and $z = px + qy + \phi(p, q)$

Standard as in the following books:—

1. H. Lamb: Infinitesimal Calculus.
2. Gibson: Elementary Treatise on the Calculus.
3. Murray: Introductory Course in Differential Equations.
4. Carslaw: Fourier Series.
5. Edwards: Differential Calculus.

Books for Reference—

1. G. H. Hardy: Pure Mathematics.
2. Goursat-Hedrick: Mathematical Analysis, Vol. I.
3. Wilson: Advanced Calculus.
4. Chrystal: Algebra, Vol. II.
5. Bromwich: Infinite Series.
6. Forsyth: Treatise on Differential Equations.
7. Boole: Differential Equations.
8. Williamson: Differential Calculus and Integral Calculus.
9. Jordan: Cours d'Analyse.
10. Picard: Traite d'Analyse.
11. Piaggio: Differential Equations.

(5) DYNAMICS OF PARTICLE.

Preliminary.

Velocity and acceleration, relative motion, angular velocity, laws of motion, impulsive force, units.

Rectilinear Motion.

Equations of motion, simple harmonic motion, constant disturbing force, periodic disturbing force, damped and forced oscillations: various laws of resistance.

Motion in two Dimensions.

(1) *Cartesian Co-ordinates*.—Composition of simple harmonic motions, motion of a projectile in vacuum, in a resisting medium, different laws of resistance. Equation of energy. Rotation axes.

(2) *Polar Co-ordinates*.—Velocity and acceleration in polar co-ordinates. Central forces; differential equation of orbit, orbits for various laws of force. Disturbed circular orbit; apsides. Law of the inverse square; construction of orbit; hodograph, time of describing an arc; Kepler's law, correction to 3rd law; perturbations.

(3) *Constrained Motion*.—Tangential and normal accelerations. Motion on a fixed smooth or rough curve. Motion in a smooth or rough cycloid, motion in a circle, time of describing an arc, series for time of oscillation; small oscillations of simple pendulum under resistance proportional to square of velocity. Motion on a revolving curve; motion of a particle in a revolving tube.

(4) *Motion of two or more Particles*.—Principles of conservation of energy and of angular momentum. Two particles connected by a string passing over a pulley. Impulses, motion of a chain, motion of varying mass.

(6) DYNAMICS OF A RIGID BODY.

Moments and products of inertia; momental ellipsoid, momental ellipse, equimomental systems. Principal axes. D'Alembert's principle, general equations of motion. Independence of translation and rotation. Impulsive forces.

Motion about a fixed axis.—Fundamental theorem. The compound pendulum, centre of oscillation. Torsional oscillations, bifilar suspension. Pressures on the fixed axis, bodies, symmetrical and not symmetrical. The ballistic pendulum. Impulsive forces, centre of percussion.

Motion in two Dimensions.—Finite forces. General principles of conservation of energy and of linear and angular momentum. Systems with one degree of freedom, oscillations about equilibrium. Impulsive forces, impact of a rotating sphere on the ground. Lagrange's equations, systems of two degrees of freedom, double pendulum, oscillations about equilibrium.

Standard as in the following books:—

Lamb's Dynamics.

Loney's Dynamics.

Besant and Ramsay's Dynamics.

Williamson and Tarleton's Dynamics.

Books for Reference—

Love's Theoretical Mechanics.

Routh's Dynamics of a Particle.

Tait and Steel's Dynamics.

Routh's Elementary Rigid Dynamics.

(7) STATICS.

Forces at a point.—Parallelogram of forces. Parallelepiped of forces. Geometric and analytical reduction of forces acting at a point. Conditions of equilibrium of such forces. Friction. Equilibrium of a particle on smooth and rough curves and surfaces.

Forces in one plane.—Parallel forces. Theory of moments of forces and of couples; reduction of coplanar forces and conditions of equilibrium of such forces. Actions at smooth and rough hinges and joints. Principle of virtual work as applied to coplanar forces. Astatic equilibrium.

Graphical Statics.—Centres of gravity of arc, plane area, surface, and solid. Stable and unstable equilibrium. Machines with and without friction.

Forces in three dimensions acting on a rigid body.—Reduction of such forces to a force and a couple; General conditions of equilibrium; Principle of work applied to any system of forces. Work or Potential function. Stable and unstable equilibrium. Poinot's central axis; wrench, screw; resultant wrench of two given wrenches. The cylindroid. Reciprocal screws. Reduction of any system to the forces. Conjugate lines. Nul lines and nul planes.

Equilibrium of strings.—General conditions of equilibrium of an inextensible string. The common catenary, the parabola of suspension bridge, the catenary of uniform strength; strings on smooth surfaces and curves, strings on rough curves; strings under central forces, extensible string.

Standard as in—

Loney's Statics.

Books for reference—

Minchin's Statics, Vol. I and Vol. II, Chapters XIII--XV.

Routh's Analytical Statics, Vol. I.

(8) HYDROSTATICS.

Definitions of 'perfect fluid' and 'pressure at a point.' Equality of pressure at a point in all directions: general conditions of equilibrium of a fluid and of a liquid in particular. Fluid at rest under the action of (1) gravity, (2) central forces. Rotating liquid.

Resultant thrusts of fluid on plane areas. Centre of pressure. Thrust of liquid on curved surfaces.

General condition of equilibrium of a floating body. Surfaces of buoyancy and flotation. Positions of equilibrium. Potential energy stored up by the immersion of a solid.

Stable and unstable equilibrium of floating body. Metacentre; expression for metacentric height. Experimental determination of metacentric height; stability of equilibrium (1) of a hollow vessel containing a liquid floating in another liquid; (2) of bodies floating under constraint; (3) of bodies floating in heterogenous liquid (simple cases only); theory of stability based on the principle of energy.

Standard as in—

Besant and Ramsay's Hydrostatics, Chapters I—V.

Minchin's Hydrostatics excepting Chapter on Surface tension.

Book for Reference—

Greenhill's Hydrostatics.

(9) ASTRONOMY—*General and Elementary Spherical.*

The celestial sphere, astronomical co-ordinates.

The diurnal motion of the heavenly bodies and its explanation by rotation of the Earth. Arguments and proofs for the Earth's rotation. Change of phenomena due to a change of the observer's place on the Earth. Form and size of the Earth. Simple problems connected with the diurnal motion solved by using spherical trigonometry.

The apparent motion of the Sun among the stars. Variations in the length of the day at various places. Twilight. Explanation of the phenomena on the supposition of the annual motion of the Earth round the Sun and proofs for this hypothesis. The determination of the first point of Aries and the obliquity of the Ecliptic. The signs of the Zodiac. Effects of Precession and Nutation.

The Earth's orbit round the Sun. Kepler's laws and Newton's deductions therefrom. True anomaly, mean anomaly and the lengths of the different seasons.

Finding by observation the latitude and longitude of a place, and the error of the clock.

Different units of time and the conversion of one into another. Sundial. Equation of time. Different kinds of years. The Calendar.

Corrections of observations for astronomical refraction, parallax and aberration and the fundamental formulæ embodying these corrections. Determination of parallax of heavenly bodies and their distances.

The Moon. Its orbit round the Earth and the Sun. Its rotation and librations. Synodic and Sidereal months. Eclipses, and their causes. Ecliptic limits. Number of eclipses in a year. The Saros.

Members of the solar system. Elements of a planet's orbit. Direct and retrograde motions of the planets. Phases of the planets. Transits of planets across the Sun. Comets and meteors.

Principal constellations and stars. Double and multiple stars. Binary Stars. Nebulae.

The observatory. The principal instruments—The astronomical clock. Transit Instrument. The Transit Theodolite. Equatorial. Sextant. The principal errors of the Transit Instrument and their corrections.

Text-books recommended for Study—

- (1) Barlow and Bryan's Astronomy.
- (2) Young's General Astronomy.
- (3) Moulton's Introduction to Astronomy.
- (4) Ball's Spherical Astronomy (*easier parts*).
- (5) Astronomy by Dr. H. Subrahmanya Ayyar.

Books for Reference—

- (1) Ball's Spherical Astronomy.
- (2) Newcomb's Spherical Astronomy.
- (3) H. S. Jone's General Astronomy.

(10) STATISTICS.

Including Probabilities and Errors of Observation:—

PROBABILITIES *a priori*:—

Mathematical definition: elementary theorems and examples. Addition and multiplication of probabilities, with examples. Binomial distribution and the most probable event. Mathematical expectation.

***A posteriori* or Inverse:—**Bayes's Rule and its criticisms.

THEORY OF VARIABLES (a) *Symmetrical Frequency distribution.* -

Errors, different kinds, nature of accidental errors.

Gauss's Law of Error; its proof based on the nature of accidental error. Error curve.

The law of least squares and deduction of the principle of arithmetical mean. Proof of law of error based on the principle of arithmetical mean. The median and the law of error based on the median. Application to one unknown; measure of precision, mean square error, probable error. Observations of different weights. Adjustment of indirect observations involving one unknown and more than one unknown. Normal equations, their formation and solution. Probable error of an observation of unit weight. Probable errors of unknowns and determination of their weights. Adjustment of conditioned observations. Rejection of observations.

(b) *Asymmetrical Frequency distribution.*—The median, mode, standard deviation. Method of moments to derive a formula to fit a particular statistical experience. Sheppard's Corrections, Smoothing by (i) Summation Method, (ii) the Method of Least Squares (Criticism of its defects) and (iii) Contiguous Arcs of High Order Parabola. Curve fitting. Generalised Normal Curves. (Pearson's curves). Goodness of Fit-Tables for P. and X. Skewness; Theory of Dispersion.

(c) *Frequency distribution of two variables*—Correlation and Contingency tables and their representation by surfaces. Correlation: regression: correlation co-efficient and correlation ratio.

(d) *Frequency distribution of several variables*—Partial correlation. Multiple Correlation.

SAMPLING:—Normal correlation. (i) Calculation of Mean Values of $\bar{P}_{ab} \equiv (\bar{x}^a \bar{y}^b)$ for Positive Integral values of a and b ; (ii) Probable Errors of the Mean, the Standard Deviation and the Co-efficient of Correlation.

THEORY OF ATTRIBUTES:—Classification, consistency, association: **partial association.**

GENERAL STATISTICAL METHODS WITH ILLUSTRATIONS.

THE PRINCIPLES OF INDEX-NUMBER MAKING AND USING.

(a) *Books recommended for study*:—(1) Fisher: 'Theory of Probabilities.' (2) Chrystal: chapter on 'Probabilities' in his Algebra. (3) L. D. Weld: 'Theory of errors and least squares.' (4) David Brunt: 'Combination of observation.' (5) Undy Yule: 'Theory of Statistics.' (6) D. C. Jones: 'First Course in Statistics.' (7) Bowley: 'Elements of Statistics.'

(b) *Books for Reference*.—(1) Elderton: 'Frequency curves and Correlation.' (2) Secrest: 'Statistical Methods.' (3) King: 'Elements of Statistical Method.' (4) Karl Pearson's memoirs in 'Biometrika,' 'Phil.—Trans.' and 'Phil.—Mag.' (5) The article on Probabilities in the 'Encyclopaedia Britannica.'

(11) THEORY OF UNIFORM FUNCTIONS OF A COMPLEX
VARIABLE AND INTEGRAL FUNCTIONS.

General Theory.

Complex numbers, their geometric representation. DeMoivre's Theorem. Definition of a function of a complex variable, uniformity and multiformity of functions. Analytic functions, the Cauchy-Riemann definition, the differential equations satisfied by the real and imaginary parts of an analytic function. Conformal representation of one plane on another complete discussion of the transformations

$$u = \frac{az+b}{cz+d}, \quad u = z^n \quad (n \text{ positive integer}), \quad u = ez \quad (\text{with simple variations})$$

Cauchy's Theorem for simple contours and functions which are analytic inside and on the contour. The fundamental formula

$$f(x) = \frac{1}{2\pi i} \int \frac{f(z)}{z-x} dz. \quad \text{Taylor's series, Liouville's theorem. Laurent's}$$

expansion. Point at infinity, development in its domain. Weierstrass's theorem on the asymptotic behaviour in the domain of an isolated essential singularity. Weierstrass's theorem on a series of analytic functions. Fundamental theorem on residues with simple applications, including evaluation of simple definite integrals.

Weierstrass's theorem on the infinite product expression for an integral function. Mittag-Leffler's theorem on the expression of a function with isolated singularities as a series of rational functions.

Simple periodic functions, expansion of an integral simple periodic function. The impossibility of a uniform analytic function having three independent periods. Elliptic functions, their general properties about the sum of the residues, the number of zeroes and the number of poles, the difference between the sum of the zeros and the sum of the poles in a parallelogram of periods; algebraic relation between elliptic functions of the same periods. The Weierstrassian function $P(u)$ and its fundamental properties.

The fundamental properties of power series of a complex variable, elements of an analytic function, the process of analytic continuation. Weierstrass's conception of an analytic function. Singular points, their place in the Weierstrassian Theory. Functions with natural boundaries, simple examples.

Integral Functions.

The Maximum Modulus Theorem.

Schwarz's Lemma.

Caratheodory's Inequality.

Definitions of: Order, Exponent of Convergence, Canonical Product, Genus.

The Function $n(r)$.

Hadamard's Factorization Theorem.

The order of a canonical product is equal to the exponent of convergence of its zeroes.

For any integral function, if the order is not an integer, the exponent of convergence is equal to the order.

Easy applications.

The following books, in so far as they deal with the subject matter given in the syllabus, are recommended:—

A. Books for study:—

1. Goursat: Mathematical Analysis—Vol. II, Part I.
2. Borel: Lecons sur la Theorie des Fonctions entiers.
3. Watson: Complex Integration and Cauchy's Theorem.
4. McRobert: Theory of Functions.
5. Harkness and Morley: Introduction to the Theory of Analytic Functions.
6. Titchmarsh: The Theory of Functions.
7. P. Dienes: The Taylor Series.

B. Books for reference:—

1. Forsyth: *Theory of Functions*.
2. Whittaker and Watson: *Modern Analysis*.

(12) ORDINARY LINEAR DIFFERENTIAL EQUATIONS.

(A) *Elementary Methods of Integration*.—Equations of the first order, standard forms, Bernoulli's and Riccati's equations. Integrating factors. General linear equation of the n th order and properties, depression of order, adjoint equation. Special forms: with constant co-efficients, Euler's equation (only for two variables). Laplace's equation, exact differential equation. The general linear differential equation of the 2nd order; various methods of integration, normal form. Trajectories.

(B) *The Theory of Linear Differential Equations*.—Existence theorems. Equation of the first order, system of linear equations of the first order, homogeneous linear equation of the n th order. First integrals, Jacobi's multipliers. Fundamental systems of integrals, the $\Delta \neq 0$ criterions. Regular integrals. Study of integrals near a singular point; form and properties, permutation of integrals. The fundamental equation; formal expression of the integrals when all the roots of the fundamental equation are distinct; expression in logarithmic form of the set of integrals corresponding to a repeated root of multiplicity. Fuchs's Theorem on the form of a homogenous linear equation having all its integrals regular near a singularity, and its converse. Frobenius's method of integration for equations of the 2nd order and application to Legendre's and Bessel's equations and to the equation of the hypergeometric series.

(C) *Higher methods of integration*.—Integration by series with simple applications to Legendre's equation, Bessel's equation, and the equation of the hypergeometric series. Solution by definite integrals of Laplace's equation and Bessel's equation. Systems of linear equations with constant variable co-efficients.

Standard to be found in:—

(A)	{	Forsyth's Treatise	
		Goursat	Chapters II—III
(B)	{	Forsyth's Theory, Vol. IV,	Chapter I nearly complete.
		Goursat	Chapters II—III greatly restricted.
(C)	{	Forsyth's Treatise	Chapters V, VII and
		Goursat	Chapter VIII restricted.

Books recommended:—

- A. R. Forsyth: (1) *Treatise on Differential Equations.*
 (2) *Theory of Differential Equations.*
 Part III, Vol. IV.
- Goursat's *Mathematical Analysis*, Vol. II, Part II (English Translation).
- Jordan: *Cours d'Analyse*, Vol. III.
- Laurent: *Traite d'Analyse*, Tome V.
- Picard: *Traite d'Analyse*, Tome III.
- Schlesinger: *Handbuch der Theorie der linearen Differentialgleichungen.*

(13) HYDRO-DYNAMICS.

IRROTATIONAL MOTION OF LIQUIDS.

*Detailed Syllabus.***Preliminary—**

Eulerian and Lagrangian variables. Velocity, acceleration. Steady motion. Analysis of the motion of a fluid element. Stream lines, paths of particles, vortex lines. Irrotational motion; velocity potential ϕ . Flow and circulation. Stokes' theorem. Cyclic and acyclic motion. Green's theorem.

Equation of continuity. Boundary conditions.

Equations of motion and general theory—

Eulerian equations of motion. Equation of energy. Pressure equation. Torricelli's theorem. Equations of impulsive motion; impulsive pressure in irrotational motion. Helmholtz's equations of vortex motion. The circulation theorem; permanence of irrotational motion. Lagrangian equations of motion. Cauchy's integrals.

General theorems on irrotational motion. Mean value of ϕ over a spherical surface. Expression for the kinetic energy. Uniqueness of solution when boundaries have prescribed velocities or are subject to given impulses. The minimum energy theorem. Representation of motion by means of surface distributions.

Motion in two dimensions—

The stream function ψ . Irrotational motion. Conjugate functions. Sources and sinks. Method of images. Use of conformal transformations (Schwarz-Christoffel theorem

and its applications are excluded). Motion of circular and elliptic cylinders in liquid. Instantaneous motion of liquid between coaxial circular cylinders or confocal elliptic cylinders. General formulæ for ψ at the boundary of a cylindrical body in motion; applications. Formulæ for the force and couple on a fixed cylinder in a steady stream. The lift due to circulation.

Motion in three dimensions—

Image of a source or a radial doublet in a sphere. Motion of a sphere in liquid; initial motion of liquid between concentric spheres. Symmetry about an axis; Stokes' stream function ψ ; equation for ψ in irrotational motion; solutions in polar co-ordinates. Ellipsoidal co-ordinates. Translation and rotation of an ellipsoid, including its degenerates.

Motion of solids in liquid—

Equations of motion of simple solids in liquid (excluding cases requiring the use of formulæ for removing axes in three dimensions). Approximation to the motion of (1) a sphere in liquid with a plane boundary, (2) two spheres in an infinite liquid.

Waves—

Long waves. Surface waves; waves at the surface separating two liquids. Capillary waves.

Book recommended for study—

Ramsay's Hydrodynamics, Chapters I to V, Chapter VI (restricted), Chapter VII, Chapter VIII (restricted) and Chapter X.

Books for Reference—

Lamb: Hydrodynamics.
Appel: Mécanique Rationnelle Tome III.
Basset: Hydrodynamics (out of print).

Branch II.

PHILOSOPHY.

1. General Psychology.

I. The scope, data and methods of Psychology.

General analysis of conscious processes into cognitive, affective, and conative attitudes.

Attention and Retention.

The Problem of Perception—Space, Time and Reality,
Causes of illusions.

Ideational and Conceptual processes—Laws of neogenesis.
 Language and concept formation. Relation between
 Meanings and Imagery. Psychology of Reasoning.

Belief, Doubt, and Insight—Subjective and objective conditions producing belief.

Creative Imagination—conditions favourable for artistic
 and scientific invention.

Intelligence—its nature and measurement.

II. The Instinctive bases of human behaviour;

Emotions—Primary and Secondary, Bodily expressions of
emotions.

Conditioning of emotional habits.

Development of Sentiments and Character.

The consciousness and growth of Self. Multiple personality.

Will; Choice; Inhibition; Decision; Resolve; Purpose.

III. The Body-Mind Relation.

Recent developments in systematic Psychologies:—

McDougall's Hormic Psychology.

Watson's School of Behaviourism.

Köhler's School of Gestalt or Configuration.

Text-Books recommended:—

1. Stout & Mace: A Manual of Psychology (Univ. Tutorial Press, 1929).
2. McDougall, W.: An Outline of Psychology (Methuen).

Books for consultation:—

1. Spearman, C.: The Nature of Intelligence and the Principles of Cognition (Macmillan).
2. Watson, J. B.: Psychology from the Standpoint of a Behaviourist.
3. Köhler, W.: Gestalt Psychology (Horace Liversight).
4. Robinson & Robinson: Readings in General Psychology.
5. Psychologies of 1930 (Clark Univ. Press).

2 (a) Syllabus in Logic and Theory of Knowledge.**(A) Knowledge and Thought**

1. Postulates of knowledge, formal and material. Relation between logical theory and functional psychology, including a detailed consideration of the antecedent conditions, datum and content of Judgment. Unity and continuity of intellectual life.
2. The central function of the knowledge-process. Image, idea and meaning as factors in logical thought. Thought and language. Names and their import. Extension and intension of terms and the doctrine of their inverse relation.
3. Nature of judgment. The various theories of judgment. Unity of judgment. Varieties of judgment and their affiliation. Negation and disjunction.
4. Nature of inference. The various theories of inference. Induction. Enumerative induction and analogy.
5. Scientific induction by perceptive analysis. Value of Mill's *Experimental Methods as methods of proof*.
6. Scientific induction by hypothesis. Different forms of explanation.
7. The varieties of deductive inference. Relation between induction and deduction. Classification of the sciences. Fallacies.
8. Necessity in knowledge.

(B) Knowledge and Reality

Relation of knowledge to truth and reality. The criterion of truth. Error. Theories of the relativity of knowledge. The conception of degrees of truth and reality. The ideal of knowledge.

2 (b) Syllabus in Ethics.

1. Scope and method of Ethics. Relation to other sciences.
2. The beginnings and growth of morality—custom; conscience; systematic reflection.
3. Moral development of the individual—Childhood; adolescence; 'conversion'; 'temptation'; fixation of character. The moral and the religious life.

4. Psychology of Ethics—Analysis of the moral judgment: the situation which provokes it; the course it follows; the function of moral criteria. Motive; intention; character.
5. Constructive theory—Good and moral good. Obligation. Casuistry. The moral ideal. Discussion of the principal virtues. The moral significance of institutions: the family; the state; property and rights; punishment.
6. Critical study of ethical thought—General characteristics of Indian, Greek and European morality. Ethical systems—hedonistic, rationalistic, psychological, idealistic.
7. Metaphysics of Ethics—The ultimate validity of moral judgment. Free will and responsibility. Morality and religion.

3. Outlines of Indian Philosophy.

The Six Darśanas—60 lectures.

Upanishadic Basis.—

- I. (1) Historical Antecedents—Mantras and Brāhmaṇas.
- (2) Rise and development of the main currents of Philosophical thought in the Upanishads.
- (3) Resultant Systems—How they emerged. Redactions in the form of Sūtras. Āstika and Nāstika Systems.
- (A) Logical Prolegomena—Pramāṇas and Causality.
- (B) A comparative and critical study.

Avedistic systems: (Materialistic and Rationalistic—Cārvāka, Jaina and Bauddha Systems).

Vedistic systems. (Supra-rationalistic systems).

II. *The Nyāya-Vaiśeṣika.*—

(a) Epistemology: Anyathā Khyāti. Rejection of other Khyātis. Pramāṇas. Vyāpti. Truth and Error.

(b) Theory of Causation.

(c) Theory of Reality.—Categories of the Vaiśeṣikas. Abhāva. External Relation.

(d) Cosmology. Theory of atoms. Conception of God as extra-cosmic and personal.

(e) Ethics and Religion. Nature of the Soul and its final destiny. Law of Karma. Tattvajñāna as the means to Moksha. Conception of Moksha.

III. *Sāṅkhya-Yoga*.—

(a) Epistemology. Pramāṇas.

(b) Theory of Causation. Satkārya-Vāda.

(c) Theory of Reality. Puruṣa and Prakṛti. Their name and relation. Plurality of Puruṣas.

(d) Cosmology. Pariṇāma. Evolution and Involution.

(e) Ethics and Religion. The Guṇas. Bandha and Moksha. The practice of Yoga.

The attitude of Kapila and Patañjali to the Existence of God. Conception of Kaivalya.

IV. *Pūrva-Mīmāṃsā*.—

(a) Epistemology. Bhaṭṭa's Viparītakhyāti. Prabhākara's Akhyāti. The Pramāṇas.

(b) Psychology. The theory of the Ātman.

(c) Ethics. Karma. Dharma and Adharma. The theory of apūrva.

V. (A) *Uttara-Mīmāṃsā or Vedānta*. Different schools of Vedānta.

(1) *Advaita*:—

(a) Epistemology. Pramāṇas. Idealistic Theory of Knowledge. The doctrine of error. Anīrva-caniya-Khyāti. Adhyāsa.

(b) Theory of Reality. Kinds of Reality: Prātibhāsika, Vyāvahārika and Pāramārthika. Brahman devoid of qualities, the only reality. Māyā, Avidyā, Iśvara. Jīva.

(c) Cosmology. Pariṇāma and Vivarta.

(d) Psychology. The nature of the Jīva. Avasthātraya.

(e) Ethics and Religion. Karma. Upāsana & Jñāna. Sādhana-Catusṭaya, as steps to moksha. Conception of moksha—Jīvanmukta.

(2) *Viśiṣṭādvaita*:—

(a) Epistemology. Pramāṇas. Yathārtha-Khyāti. Nature of error.

(b) Theory of Reality. The absolute as Personal God. Cit and Acit. Aprthaksiddha-Viśeṣaṇa. Śarīra—Śarīri-Sambandha.

(c) Cosmology. Meaning of causality. Immanence and transcendence.

(d) Psychology. The nature of the Jīva as Aṇu. Its characteristics.

(e) Ethics and Religion. Bhakti and Prapatti, the direct means to Moksha. Nature of Mukti.

(3) *Dvaita*:—

The realistic view of knowledge. External relations. The absolute as Personal God. Cit and Acit. The theory of eternal distinction between Īśvara, Cit and Acit. The denial of immanence. Nature of Mukti.

(B) Comparative and critical review of the three schools of Vedānta.

VI. *Śaiva-Siddhānta*. Āgamic basis.

(a) Epistemology. Truth and error. Satkāryavāda.

(b) Theory of Reality. The three ultimate realities. Pati, Paśu and Pāśa. Nature and characteristics. Śiva: Śakti.

(c) Cosmology. God as the efficient cause.

(d) Ethics and Religion. Means of attaining Moksha. Nature of Mukti.

4. European Philosophy from Descartes to Kant.

(COMPULSORY COURSE).

Brief characterisation of the Renaissance. Influence on philosophy of the discovery of the laws of motion and of the scope for mathematical determination in experimental method.

Descartes and the Method of Doubt. Dualism of Mind and matter. Proofs of the existence of God. Occasionalism. The concept of substance in Descartes and Spinoza. Attribute, mode and infinite mode. The principle that all determination is negation. Nature of Spinoza's Absolute, whether ultimate ground or maximal reality. His Parallelism. Necessity and freedom. Attitude to teleology. Intellectual love of God. Leibniz's attempt to find room for the many in the one by taking up relations into substance, and by substituting intension for extension. Pre-established Harmony. Non-contradiction and Sufficient Reason. Best of all possible worlds. Rationalism and Sensationism. Rise, development and bankruptcy of the 'Way of Ideas' in Locke, Berkeley and Hume. Difficulty of accounting for the ideas of substance, relation, causality, and existence. Kant's demonstration that a *priori* synthesis is a pre-condition of all consciousness of objects. Consequent transformation of the Humean scepticism into an empirical realism combined with transcendental idealism. Reality intellectually inscrutable, yet validly apprehended through the consciousness of duty. God, freedom and immortality as matter of rational certainty, though not of scientific knowledge.

5 & 6—A (b) i. Syllabus of Advaita Vedanta.

(A) History (15)—

I. Traces of Advaitic thought in the R̥g Vēda, Maṇḍalas I and X.

II. Development of Advaitic thought in—

(a) The Upanishads—mainly (1) Bṛhadāraṇyaka—Yājñavalkya's discourses; (2) Chāndogya—discourses addressed to Śvetaketu and Indra, also Śāṇḍilya, Upakośala, Bhūma and Dahara Vidyās; (3) Taittirīya; (4) Kena; and (5) Māṇḍūkya .. (3)

(b) Brahma-Sūtras, esp. I i, 1 to 9; II i, 14 and II iii, 50; III ii, 3 and III ii, 22. .

(c) Bhagavad-Gītā, esp. chapters ii, v, xiii and xviii .. (3)

(d) Viṣṇu Purāṇa (chiefly monistic extracts considered in the Sṛī Bhāṣhya) and Śrīmad-Bhāgavata (Skandhas x and xi) .. (1)

III. First systematic formulation of Advaita doctrine in Gauḍapāda's Māṇḍukyakārikās .. (3)

IV. Classical exposition of Advaita doctrine in Śaṅkara's work :

- (a) Bhāṣhya on Brahma-Sūtras—esp. reference to section II (b) and Sūtra IV, iii, 14.
- (b) Bhāṣhya on Brhadāraṇyaka and Chāndōgya (select passages).
- (c) Vivēkacūḍāmaṇi, Ātmabodha and Upadēśa-Sāhasrī. (2)

V. Rise of divergent views within the fold of Advaita.

Main topics of interest.

- (a) Ajūāna as positive (bhāva-rūpa).
- (b) Ekajīva-vāda and Nānājīva-vāda.
- (c) Drṣṭi-śrṣṭi-vāda and Pratīkarma-vyavasthā.
- (d) Śābdāparoksha and Akhaṇḍārtha doctrines.

VI. Controversy with other systems—as in Madhusūdana's *Advaita-Siddhi* .. (1)

(B) Exposition (25)—

- I. Relation to other Eastern systems (Buddhism, Sāṅkhya, etc.) Cf. Brahma-Sūtra Śaṅkara Bhāṣhya, II. ii. Relative unimportance of affinities with Western systems (Idealism, Pantheism and Monism). (3)

II. Theory of knowledge—

- (a) The Pramāṇas or means of knowledge—importance of śabda—Parā and Aparā Vidyās—nature of Jñāna and its relation to Antaḥ-karaṇa and vṛtti—Theory of pratyaksha—intuition and inference (pratyaksha and paroksha) .. (3)
- (b) Truth and Reality and the doctrine of three kinds of Reality (sattātraya) .. (1)
- (c) Nature of Adhyāsa and theory of error (anirvacanīyakhyāti) .. (3)

III. Metaphysics—

- (a) Nature of Brahman—proofs of his existence—categories of cause and substance—transcendence (neti-neti) and immanence (antaryāmitva)—saguṇa and nirguṇa vāda .. (3)
- (b) Nature of Jīvatman—plurality of jīvas—their respective avidyā, karma and upādhi—nature and proof of the identity of Brahman and Ātman—bimba-pratibimba-vadā and avaccheda-vāda. .. (2)
- (c) Nature of prapañca—theory of abhinnanimitṭō-pādāna—parināmanavāda and vivarta-vāda—doctrine of māyā; its history and proof; its relation to time, space and causality .. (2)

IV. Ethics—

- (a) Nature of the highest good (purushārtha)—mukti or complete freedom from māyā or avidyā—beyond good and evil—free from activity—positive aspects of mukti—saccidānanda—Jīvanmukti and vidēhamukti. (2)
- (b) Means of realization (sādhana)—vidyā the one means—value of such other means as karma, śamadamādi and upāsanā—call for divine grace .. (3)
- (c) Advaita and social service (lokasaṅgraha). (1)
- (d) The ideal and the real—metaphysical warrant for moral endeavour—problem of free-will—morality and religion .. (2)

(C) *Criticism—in the light of other systems, Eastern and Western* .. (20)

I. Criticism of Māyā or mithyātva—charge of acosmism .. (2)

II. Criticism of anirvācyatva or transcendence—charges of agnosticism and mysticism .. (2)

III. Criticism of svaprakāśatva or self-knowability—charge of subjectivism .. (1)

IV. Criticism of nirguṇa vāda—charge of absolutism.. (1)

V. Criticism of abhēda vāda—charge of abstract identity (1)

VI. Criticism of jīva-brahmaikya—charge of atheism and solipsism .. (3)

- VII. Criticism of jñānasādhana or the subordination of both bhakti and karma to jñāna—charge of intellectualism .. (4)
- VIII. Criticism of karmasamnyāsa—charges of renunciation and quietism .. (2)
- IX. Criticism of kaivalya as a goal—charges of moral stultification and pessimism .. (2)
- X. Criticism of Ātmarati—charge of egoism .. (1)

NOTE.—The figures in brackets are offered as an approximate indication of the number of days which, in a course extending over 60 lectures, might suitably be given to the various sections and sub-sections specified.

5 & 6—A (b) ii. Syllabus in Saiva Siddhanta.

I. History—

- A. Traces of Śaivism in the Ṛg Veda, the Yajur Veda and the Atharva Veda. The ideas of *Rudra-Paśupati*, and *Stamba-worship*.
- B. (i) Development of Siddhāntic thought or theism in—
- (a) The Upanishads, especially Śvetāśvatara.
 - (b) The Purāṇas, mainly the Śaivite Purāṇas like Śivamahāpurāṇa, Skānda and Vāyu.
 - (c) Itihāsas including the Gītā.
 - (d) Formulation of the system as indicated in the Bhāṣhya on the Brahma Sūtras by Nilakaṇṭha Śivācārya.
 - (e) Kashmir Śaivism—the development of the Pratyabhijñā system.
- (ii) Ancient Tamil literature.
- (a) Traces of Śaivite thought in Tolkāppiyam, Tiruvalluvar and Saṅgam literature.
 - (b) Growth of devotional literature in the Jaina and Buddhistic period. The rise of the Samayācāryas.
 - (c) Rise of modern Śaivism : The Santānācāryas. Systematization of worship in the Āgamas.

The fusion of the divergent currents of Śaivism in the Siddhānta.

II. *Theory of knowledge*—

Pramāṇas—Sense-perception. Reasoning and Authority. *Parā* and *aparā-vidyās*. Theories of truth and Error (Pramā and Bhrama).

III. *Metaphysics*. The three ultimate Realities: Pati, Paśu and Paśa. Viśiṣṭādvaitic tendency.

Satkārya-Vāda. The idea of causation. Criticism of other theories. Conception of God as Śiva and Śakti. God as the efficient cause. Attributes of Śiva and Śakti.

(a) Nature of Pati.—Criticism of *Nirguṇa-Vāda*. Divine motherhood and the redemptive principle of grace. Criticism of the doctrine of *Avatāra*.

(b) Nature of Paśu:—Śaiva Śiddhānta psychology. Plurality of Souls—Characteristics of the Soul—Its relation to God—Soul as *Sad-asat*. Classification of soul's Avasthās.

(c) Nature of Pāśa—The three-fold character—*Āṇava*, *māyā* and *karma*—The Thirty-six tattvas and their relation to the Soul.

(d) Elements of realism in Śaiva Śiddhānta.

IV. *Ethics and Religion*—

(a) The highest Purushārtha: Mukti or redemption.

(b) Means of attaining salvation (*caryā*, *kriyā*, *yoga*, *jñāna*, *dikṣā*).

(c) The meaning of moral and spiritual endeavour—Karma and redemption.

(d) The nature of mukti—*Ātma Darśana* and *Śiva Darśana*—Its contrast with the theistic and Advaitic ideal. (The four stages of mukti).

V. Critical study of the inter-relations of Śaiva Śiddhānta, Advaita and Viśiṣṭādvaita, as also the inter-relations of the various schools of Śaivism.

5 & 6—A (b) iv. Syllabus in Visishtadvaita.

I. *History*—

(1) Germs of Viśiṣṭādvaita in the Ṛg Veda.

Development of Viśiṣṭādvaita in—

A. The Upanishads, especially Ghaṭaka Śrūtis.

1. Bṛhadāraṇyaka (Maitreya and Antaryāmi Brāhmaṇas).

2. Chândogya, VI, VII, VIII Adhyāyas.

3. Taittirīya (Mahānārāyaṇa Upanishad).

4. Śvetāśvatara.

5. Kaṭha.

B. Brahma Sūtras and the Bhagavad Gītā with the related works by Bodhāyana, Tāṇka, Dramaḍa, Yāmuna and Rāmānuja.

C. Viṣṇu Purāṇa, II, V, VI books.

(ii) Pāñcarātra. Systematization of worship in the Mahābhārata. Vedānta Sūtras—The development of the Bhāgavata religion and its relation to Viśiṣṭādvaita.

(iii) Tamil Literature—

(a) Growth of devotional literature, Śaṅgam literature. The Ālvars—Guruparamparā, Nammālvār, the chief expounder.

(b) The rise of Śrī Vaiṣṇavism. The earliest formulation of the system by Yāmūnācārya.

(iv) The fusion of the divergent currents in the Siddhānta and its classical exposition by Rāmānuja.

(v) The rise and growth of sub-systems.

(vi) Contributions of Vedānta Deśika and Pillai Lokācārya to Viśiṣṭādvaita.

II. Theory of knowledge—

(a) Pramāṇas or the means of knowledge—Śabda, Anumāna and Pratyakṣa—Correlation as opposed to contradiction—Importance of Śabda—The Mīmāṃsaka doctrine justified—The equal validity of all Vedic texts—The relation of Śabda to Āptārākya and intuition.

(b) Satkāryavāda or realism. The doctrine of Pañcikaraṇa (Brahma Sūtras III-1-3). The Theory of immanent causality.

- (c) Nature of Error (*Yathārtha-khyāti*). The theory of continuity of *Avasthas* as opposed to that of contradiction (*mithyā*). The meaning of illusions and dreams in terms of ethical realism. Criticism of the doctrine of *Māyā*.

III. Metaphysics—

Conception of Viśiṣṭādvaita; nature of Brahman—Brahman as the immanent cause of cosmic evolution—Criticism of *Vivarta-vāda*—The absolute as the self-differentiating unity and as personality—The doctrine of *apṛthaksiddha-viśeṣaṇa*, *Sāmanādhikarāṇya*—Criticism of the *Nirguṇa vāda*—The characteristics of Brahman—The theory of incarnation—*Brahman*, *Cit* and *Acit*; eternal but not external; *Cit* and *Acit* as the *Prakāra* or mode of *Īśvara*—Nature of *Acit*—Categories and characteristics—Meaning of *Śuddha Sattva* or *Aprākṛta* and time.

IV. Psychology—

The nature of Jivātman as personality, persisting as a separate being in the four states of waking, dream, sleep and release—Its distinguishing qualities—cognition, conation and feeling (*jñātṛtvam*, *karṭṛtvam*, and *bhokṛṭtvam*)—The distinction between substantive intelligence (*dharmabhūta-jñāna*) and attributive intelligence (*dharmabhūta-jñāna*).

The Jīva as *Aṇu* or monadic as distinct from *Īśvara* who is *Vibhu*. The three classes of souls.

V. Ethics—

- (a) The moral freedom of the finite self as a distinct personality and not a mere *viśeṣaṇa*—Criticism of the Mīmāṃsaka doctrine of the Vedic imperative—Moral freedom and divine necessity reconciled.
- (b) *Īśvara* as *Nārāyaṇa*—*Nīlantā* or moral ruler of the universe—The doctrine of karma—Transcendental eminence, criticism of *bhedābheda vāda*—*Karma yogā* as worship of God without desire for fruits—Service as the supreme good.
- (c) *Īśvara* as *Nārāyaṇa* and *Śrī*—The doctrine of redemption and grace—*karma* and *kṛpā* reconciled.

VI. Religion—

- (a) The doctrine of *Śrīra-Śrīri-Sambandha*—Logical immanence and ethical transcendence, reconciled in the idea of Jīva as a body of Īśvara—The æsthetic idea of God as *Ānandamaya*.
- (b) Requisite of *Mumūkṣutva*—Progressive spiritual discipline in *Karma yoga*, *Jñāna yoga*, *Bhakti yoga* and *Prapatti*—Karma and Jñāna reconciled—The relative values of *Bhakti* and *Prapatti*—Āḷvār's mystic yearning for God.
- (c) Nature of *mukti* as the highest good or freedom from *avidyā* as well as *pāpa*—Criticism of *Jīvanmukti* and *Aikyavāda*. The relative values of *kaivalya* and God-Realisation—*Dvaita* and *Advaita* (Theism and Pantheism) reconciled.

VII. Affinities with other philosophical systems, more especially with Prābhākara and Jaina Systems.

5 & 6 A. (c) Syllabus in Greek Philosophy.

A. Development of Greek Cosmological Metaphysics.—

Historical and Psychological study of conditions under which philosophic speculation arose in Greece and her colonies. Examination of claims of early cosmologists to be accounted philosophers. Inconsistent implications of hylozoism—as met by the Eleatics: as met by Heraclitus. Mechanistic tendency of the so-called mediators, culminating in the materialistic system of Democritus.

B. Growth of Critical and Systematic Philosophy.—

The sophists: in their relation to the social and political situation of their times; in relation to foregoing speculations and doctrines; in relation to further development of philosophic thought. Socratic reconstruction of rationalistic point of view already uncritically assumed by both Parmenides and Heraclitus. Plato's theory of ideas; the anomalous position in which he left sense experience and the world of nature. Aristotle's attack upon Platonic idealism—his own attempt at harmonising phenomenal and noumenal aspects of the universe.

C. Development of Practical Philosophy—Decline of Greek Philosophic thought.—

Emergence of ethical interest; casuistry of sophists; constructive moral theory in Socrates' identification of wisdom and virtue; development of concept of ideal state of Plato and Aristotle; individualistic trend of Cynics and Cyrenaics, followed by Stoics

and Epicureans respectively. Increasing prestige of practical in proportion to waning of more abstract philosophic interest. Mystery cults as influencing and as displacing philosophy. Brief summary of Megaric, Peripatetic and Academic doctrines and of various Hellenistic—Roman philosophic tendencies through Philo and Plotinus.

5 & 6 A. (e) European Philosophy from Kant to Hegel.

(OPTIONAL COURSE).

Kant's relation to Leibniz and to Hume. Nature of the Transcendental or Critical Method. Brief consideration of the problem and the conclusions of the Transcendental Aesthetic. The Metaphysical Deduction of the Categories—a brief characterisation. Careful exposition of the gist of (a) the Transcendental Deduction (Subjective and Objective) of the Categories, and (b) of the First and Second Analogies. Subjectivism and Phenomenalism in Kant. The sceptical and the idealist tendencies distinguishable in the Transcendental Dialectic. The Paralogisms, the Antinomies, and the Proofs for the Being of God. The Regulative Value of the Ideas of Reason. Relation between the Critiques of Pure and of Practical Reason. Problem of the possibility of the categorical imperative. The relation between the *Supremum Bonum* and the *Summum Bonum*. The reality of freedom. General Problem of the *Critique of Judgment*. Kant's hypothetical reconciliation of Mechanism and Teleology. Critical study of Fichte's way of transforming the Kantian Phenomenalism into an Absolute Idealism. Brief description of Schelling's advance upon Fichte. Hegel's criticism of Fichte and Schelling. Careful exposition of Hegel's identification of Logic and Metaphysics. Brief statement of the nature of the tasks to which he addressed himself in the Phenomenology, the Logic, and the Philosophies of Nature and of Spirit. Understanding and Reason. Abstract and Concrete. The Dialectic Principle. Relation of the dialectical evolution to time. The Real and the Rational. Alleged intellectualism of the Hegelian system.

5 & 6 A. (f) Philosophical work prescribed.

1938.

S. Radhakrishnan: *An Idealist View of Life*.

1939 and 1940.

Ward: *The Realm of Ends*.

1941 and 1942.

Taylor: *The Faith of a Moralist*, Vols. I and II.

5 & 6 B. (a) Social and Abnormal Psychology.

(Social.)

Scope, data and methods of Social Psychology.

Origins of Group Life. Social Character of Behaviour.

Mechanism of Social Behaviour.

Emergence of the Crowd. Analysis of Crowd Behaviour.
Classification of crowds and higher groups.

The Group Spirit.

The Mind of a Nation—What constitutes a Nation. The part of leaders in national life. Essentials of national life.

Psychology of the Home. The parent-child relationship.

Psychological bases of Culture, Morality, Economic Value, Religion and Art.

Social Neuroses.

(*Abnormal*).

Standpoint, data and methods of Abnormal Psychology.

Schools of Abnormal Psychology. Theories of the Unconscious and the Subconscious.

Theories of Hypnosis and Suggestion.

Theories of Dream—Freud, Jung, Rivers, etc.

Conflict, Repression, and the Complex. Psychology of forgetting.

Regression.

Delusions, Hallucinations, Exaltation and Depression.

Nature and causation of neurotic and mental disorders.
Theories of Freud and Adler.

Psychological Types—Extroverts, Introverts, Cycloids and Schizoids.

Psycho-therapeutic methods—Abreaction, Free Association, Re-adjustment, etc.

Alternating and Co-conscious personalities. Personality and its disintegration.

Mental Hygiene. Psycho-pathology of every-day life. Wit and the Unconscious.

Text-books—(Books for consultation only marked thus).*

1. Radhakamal Mukerjee & N. N. Sen Gupta: Introduction to Social Psychology (Heath) 1928.

*2. Thouless, R. H.: Social Psychology, (Univ. Tutorial Press).

3. McDougall, W.: The Group Mind, (Camb. Univ. Press).

4. McDougall, W.: An Outline of Abnormal Psychology. (Methuen).

- *5. Brill, A. A.: Fundamental Conceptions of Psychoanalysis, (George Allan).
- *6. Freud, S.: Interpretation of Dreams.
- *7. Taylor: Readings in Abnormal Psychology.
- 8. Bernard Hart: Psychology of Insanity, (Camb. Univ. Press).

The following courses of reading are suggested but in no sense prescribed for the various subjects of the B.A. Honours Degree Examination:—

1938

1. PSYCHOLOGY.

Text-books recommended.—

- 1. Stout & Mace: A Manual of Psychology.
- 2. W. McDougall: An Outline of Psychology.

Books for consultation.—

- 1. C. Spearman: The Nature of Intelligence and the Principles of Cognition.
- 2. J. B. Watson: Psychology from the Behaviourist Standpoint.
- 3. W. Köhler: Gestalt Psychology.
- 4. Robinson and Robinson: Readings in General Psychology.
- 5. Psychologies of 1930: (Clark University Press).
- 6. Woodworth: Contemporary Schools of Psychology.

2. (a) THEORY OF KNOWLEDGE.

(Books marked thus are for consultation only.)*

- Bosanquet: Logic or the Morphology of Knowledge, 2 Vols.
- *Bradley: The Principles of Logic.
- Dewey: Studies in Logical Theory, Chapters I to V and VII.
- *James: The Meaning of Truth.
- *Drake: Introductory Essay in Essays in Critical Realism.
- *Joad: Introduction to Modern Philosophy.
- Joachim: The Nature of Truth.

2. (b) ETHICS.

- Dewey & Tufts: Ethics.
- Croce: The Philosophy of the Practical.

Green: Prolegomena to Ethics, Books II and III.

Moore: Principia Ethica, Chapters I to IV.

Bradley: Appearance and Reality, Chapter XXV.

Bradley: Ethical Studies.

Rogers: A Short History of Ethics.

Mackenzie: Hindu Ethics.

Hopkins: The Ethics of India.

Muirhead: Rule and End in Morals.

3. OUTLINES OF INDIAN PHILOSOPHY.

Deussen. The Philosophy of the Upanishads.

Sarvadarśanasamgraha (English Translation by Cowell and Gough).

Chatterjee: Hindu Realism.

Thibaut: Introduction to the translation of the Vedānta Sūtras.

Radhakrishnan: Indian Philosophy, 2 Vols.

Das Gupta: A History of Indian Philosophy, Vols. I and II.

Ranade: A Constructive Survey of Upanishadic Philosophy.

Keith: The Sāṅkhya System.

Keith: Karma-Mīmāṃsā.

Keith: Indian Logic and Atomism.

P. N. Srinivasachari: The Philosophy of Bhedābheda.

P. N. Srinivasachari: Rāmānuja's Idea of the Finite Self.

Suryanarayana Sastri: The Śivādvaita of Śrīkaṇṭha.

Suryanarayana Sastri: The Sāṅkhyakārikā.

M. Hiriyanna: Outlines of Indian Philosophy.

Kuppuswami Sastri: A Primer of Indian Logic.

Davies: The Sāṅkhya Kārikā.

R. Nagaraja Sarma: The Reign of Realism in Indian Philosophy.

4. EUROPEAN PHILOSOPHY FROM DESCARTES TO KANT.

Rand: Modern Classical Philosophers (from Descartes to Kant).

Thilly: History of European Philosophy.

Adamson: Development of Modern Philosophy.

Latta: The Monadology of Leibniz.

Caird: The Philosophy of Spinoza.

Johnston: The Development of Berkeley's Philosophy.

Norman Smith: Studies in Cartesian Philosophy.

Hoffding: History of European Philosophy.

A. D. Lindsay: Kant (Leaders of Philosophy—Benn).

Woodburne: Theory of Knowledge from Locke to Kant.

5 AND 6. LIST A.

(a) *Indian Logic.*—

- (1) Primer of Indian Logic by Mahamahopadhyaya S. Kuppuswami Sastri.
- (2) Indian Logic and Atomism by A. B. Keith.
- (3) Indian Logic in the Early Schools by H. N. Randle.
- (4) Nyāyā Sūtras, English Translation in the Sacred Books of the Hindus.
- (5) Vaiśeṣika Sūtras, English Translation in the above series.
- (6) The Chapter on Logical Realism in "Indian Philosophy", Vol. II, by Sir S. Radhakrishnan.

For Consultation.—

- (7) The Siddhāntamuktāvalī.
- (8) The Mānameyodaya, English Translation (T. P. H.).
- (9) History of Indian Logic by S. C. Vidyabhushana.
- (10) Buddhist Logic (2 Volumes) by Th. Stcherbatsky.
- (11) The Six Ways of Knowing by D. M. Datta.
- (12) The Saptapadārthī—English Translation, (T. P. H.).

(b) (i) *Advaita Vedānta.*—

Bṛhadāraṇyaka and Chāndōgya Upanishads with Śaṅkara's commentaries (English translation edited by V. C. Seshachari, Mylapore).

Bhagavad Gītā with Śaṅkara's commentary (English translation by A. Mahadeva Sastri; V. R. Sastrulu & Sons, Esplanade, Madras).

Gauḍapāda's Kārikās on the Māṇḍūkyopaniṣad (English translation by M. N. Dvivedi).

Deussen: The System of the Vedānta.

Prabu Dutt Shastri: The Doctrine of Māyā.

S. Radhakrishnan: Indian Philosophy, Vol. II, (the chapter on Advaita).

Śaṅkara's Bhāṣhya on Sūtras, I, i, 1—4, with the Bhāmati Catuṣsūtrī (edited by Suryanarayana Sastri and Kunhan Raja, Adyar).

Śaṅkara: Vivekacūḍāmaṇi.

(ii) Śaiva Siddhānta.—

Śivajñānabodham with the Bhāṣhya of Śivajñāna Swāmigal.

Śivajñānasiddhiār.

Siddhānta Ashtakam by Umāpati Śiva.

Jñānāmṛtam.

Siddhānta-Sārāvali.

Śrikanṭha's Bhāṣhya on the Vedānta Sūtras with Appayya Dīkshita's Śivārkaṇḍīpikā.

Tevāram.

Tiruvācakam.

Tirumantiram.

Śivatattvavivekam.

Kashmir Śaivism Series—more especially Abhinava Gupta's works and "Kashmir Śaivism" by Chatterjee.

Woodroffe: Śakti and Śākta.

Suryanarayana Sastri: Śivādvaita of Śrikanṭha.

(iii) Dvaita.—

Courses of reading will be suggested later.

(iv) Viśiṣṭādvaita.—

Vedārtha Saṅgraha.

Śrī Bhāṣhya, I (i)—1—4, (with Thibaut's Introduction and English Translation).

Gītābhāṣhya.

The 6000 Paḍi of Nammālvār's Tiruvāimoli.

McNicol: Indian Theism.

Bhandarkar: Vaiṣṇavism, Śaivism, etc.

T. Rajagopalachariyar: Vaiṣṇavite Saints.

S. Krishnaswami Ayyangar: History of South Indian
Vaiṣṇavism.

Rahasyatrayasāra: Chapters 2 to 6.

Tattvatraya.

P. N. Srinivasachari: Rāmānuja's Idea of the Finite Self.

(v) <i>Sāṅkhya</i> .	} Courses of reading will be suggested later.
(vi) <i>Buddhism</i>	
(vii) <i>Jainism</i>	

(c) <i>Greek Philosophy</i>	} Do.
(d) <i>Scholastic Philosophy</i> .	

(e) *Philosophy from Kant to Hegel*.—

Norman Smith: Commentary on Kant's Critique of
Pure Reason.

Caird: The Critical Philosophy of Kant, 2 Vols.

Watson: The Philosophy of Kant Explained.

Ward: A Study of Kant.

Croce: The Philosophy of Hegel.

Stace: The Philosophy of Hegel.

Wallace: Hegel's Philosophy of Mind.

Reyburn: The Ethical Theory of Hegel.

Sterrett: The Ethics of Hegel.

McTaggart: Studies in Hegelian Cosmology.

(f) *A Philosophical work dealing constructively with the general
problems of Philosophy*.—

For 1933: S. Rādhakrishnan: An Idealist View of Life.

5 AND 6. LIST B.

(a) *Social and Abnormal Psychology*—

(Books marked thus* are for consultation only.)

Mukherjee and Sen Gupta : Introduction to Social Psychology.

Thouless: Social Psychology.

McDougall: The Group Mind.

McDougall: An Outline of Abnormal Psychology.

*Freud: The Interpretation of Dreams.

*Taylor: Readings in Abnormal Psychology.

Hart: The Psychology of Insanity.

Hollingworth: Abnormal Psychology.

(b) *Child and Educational Psychology.*

(c) *Philosophy of Religion.*

(d) *Hindu Social Thought.*

(e) *A prescribed Period or School of Political Philosophy.*

(f) *Political Philosophy.*

Courses of reading
will be suggested
later.

Note:—Till new sets of books are suggested for reading, the following books recommended for study in the respective subjects under the Old Regulations will be continued:—

Political Philosophy—

Green: Principles of Political Obligation.

Bosanquet: Philosophical Theory of the State.

Barker: Political Thought from Spencer to To-day.

Rousseau: The Social Contract.

MacIver: Community.

Laski: Grammar of Politics.

Philosophy of Religion—

Introductory—

Galloway, G.: The Philosophy of Religion, pp. 1-52.

Foster, G. B.: The Function of Religion.

Woodburne: The Religious Attitude.

I. Historical—

- Tylor, E. B.: *Primitive Culture*.
 Frazer, J. G.: *The Golden Bough* (abridged edition).
 Galloway, G.: *The Philosophy of Religion*, pp. 88-152.
 Wundt, W.: *Elements of Folk Psychology, on Totemism*.
 Durkheim, E.: *Elementary Forms of Religious Life*.
 Hastings: *Encyclopædia of Religion and Ethics—*
articles: Animism, Totemism, Fetichism, Magic
and Taboo.
 Needham: *Science, Religion & Reality*.

II. Psychological—

- Höfding, H.: *Philosophy of Religion*.

Psychology—

- Galloway, G.: *Philosophy of Religion*, pp. 54-87
 153-179, 219-250.
 Coe, G. A.: *The Psychology of Religion*.
 Pratt, J. B.: *The Religious Consciousness*.
 King, Irving: *The Development of Religion*.

III. Logical—

- Galloway: *Philosophy of Religion*, pp. 180-218.
 Leuba, J. H.: *A Psychological Study of Religion*;
Appendix.
 Pratt, J. B.: *The Religious Consciousness*.

IV. Epistemological—

- Galloway: *The Philosophy of Religion*, pp. 251-370.
 Caird, John: *Introduction to the Philosophy of*
Religion, Chapters 6 and 7.
 Hastings: *E. R. E.*, Article on Epistemology.
 Streeter, B. W.: *Reality* (Macmillan & Co.).

V. Metaphysical—

- Galloway: *The Philosophy of Religion, Part III*.
 Kant: *Metaphysics of Morality*.
 Ward, James: *The Realm of Ends*.
 Taylor: *Elements of Metaphysics*, pp. 359-407.
 Rev. A. G. Hogg: *Redemption from the World*.

Note.—Students will not be expected to acquire a detailed knowledge of all the Selected Readings. Special attention will be given to the following works:—

Galloway, G.: The Philosophy of Religion.

Pratt, J. B.: The Religious Consciousness.

Woodburne: Religious Attitude (Macmillan & Co.).

1939 and 1940.

The same as for 1938 (*Vide* page 514) with the following modifications:—

- (i) The prescribed modern work, under 5 and 6, list A (f) of the Regulations—Ward's "The Realm of Ends".
- (ii) Add to the list of books recommended under 5 and 6, list A (e) the following book:—A. D. Lindsay: Kant (Benn).

1941 and 1942.

The same for 1940, with the following change:—

The prescribed modern work under 5 and 6, list A (f) of the Regulations—Taylor's "Faith of a Moralists, Vols. I and II".

Branch III.

HISTORY.

HISTORY OF INDIA.

BRANCHES III AND IV.

In addition to books recommended for consultation for B.A. (Pass) (*Vide* p. 411), the following books are prescribed:—

Marshall—Mohenjo Daro (Chaps. 1—8).

Smith—Early History of India.

The Cambridge History of India.

Lee Warner—The Native States of India.

Ramsay Muir—The making of British India.

The Butler Committee Report.

Montague and Simon Reports and connected papers.

ENGLISH CONSTITUTIONAL HISTORY.

Syllabus.

Candidates are expected to show a critical knowledge of sources. In addition to the books recommended for the Pass Degree (*vide* p. 414) the following books are recommended so as to bring out the scope of the subject:—

Adams: English Constitutional History.

Medley: English Constitutional History.

**522 TEXT-BOOKS IN ENGLISH CONSTITUTIONAL [APP.
HISTORY—BRANCH III—FOR B.A. (HONS.) DEGREE
EXAMINATION.**

- White: The making of the English Constitution to 1485.
Wakeman: Constitutional Essays.
Stubbs: Select Charters (Introduction).
Prothero: Select Documents illustrative of the times of Elizabeth and James I (Introduction).
Tanner: Tudor constitutional documents.
Tanner: English constitutional conflicts of the 17th century.
Gardiner: Select documents of the Puritan Revolution (Introduction).
Robertson: Select Statutes, cases and documents.
Dicey: The Privy Council.
Dicey: The Law of the Constitution.
Percy: The Privy Council under the Tudors.
Davis: George III and the Constitution.
Pollard: Evolution of Parliament.
Pollard: Factors in Modern History.
Bagehot: The English Constitution.
Blauvelt: The growth of the Cabinet.
Hewart: The new Despotism.
Muir: How Britain is governed.
Lowell: Government of England.
Robson: Administrative Law.
Keir and Lawson: Select cases in Constitutional Law (O.U.P.).
Adams and Stephens: Select Documents of English Constitutional History.

ECONOMICS.

Students will be required to show a clear understanding of economic principles by intelligent application of economic theory to Indian facts and problems.

General.—The scope of economics. Relation of Economics to other Sciences. Methods of economic enquiry, deductive and inductive, (*e.g.*, family budgets, village and city surveys, statistics).

Psychological Basis of Economics and Consumption.—Classification of Wants. Satiability, Wants in relation to activities. Elastic and Inelastic Demand. Economic meaning and types of consumption. Conception of 'Utility' and 'Value'. Economic motives; the 'Economic Man'; influence of the Family System.

The Production of Wealth.—Definition. Production as (a) creation of use value, (b) creation of exchange value. Classification. Production for Producer's use (a) Individual, (b) Social. Production for the Market.

Factors of Production.—National forces and materials, soil, sun, rain, minerals, etc. The Principle of Conservation. *Material Capital* (Classification of forms), social and individual capital. *Human energies*, (a) physical (b) intellectual. Theory of population. Efficiency dependent on (a) individual physique, nutrition, knowledge, skill, moral quality. (b) social conditions, e.g., social order, co-operation and division of labour, Methods of conserving past acquisitions of skill and knowledge (e.g., hereditary occupations, apprenticeship, industrial education). New acquisitions (e.g., research and invention).

Characteristics of Modern Production.—Basis (a) Individual Property. (b) Contract. Character (a) Mercantile, (b) Capitalistic. *Forms* (a) Individual (peasant and craftsman), (b) Capitalistic (individual employer and joint-stock company), (c) Co-operative, (d) Collectivist (state and municipal) *Specialization*. *Concentration* in agriculture, manufacture, transport, commerce. Horizontal and vertical combinations. *Competition and Monopoly*. Extent to which Indian industry possesses these characteristics.

Stages of Production.—Extractive Industries. Agriculture. Fishing, Forestry, Mining, etc. *Manufacture*, Laws of Diminishing Returns and Increasing Returns. *Transport and Commerce*, local, intranational and international. *Money, credit, and insurance* as auxiliaries to production.

Mechanism of Exchange.—Origin and functions of money. Metallic Coinage. Monometallism and Bimetallism. Functions of Banks. Fiduciary money and money substitutes. (Treasury notes, bank notes, cheques, bills of exchange). Settlement of accounts, intranational and international. The Rupee. Indian Exchange. Indian Banking organization.

Exchange Value.—Theory of Value. Equilibrium between Demand and Supply. Market value and normal value. Values in international trade. Crises. Overproduction. 'Value of Money' meanings of phrase; Quantity Theory; Cost and Marginal Utility Theory. Variations in Value of Money.

Distribution of Wealth.—The Share of Land; Rent. Supply and Demand in relation to Land. The Ricardian Law of Rent. Economic Rent. Customary Rent. Rack-rent. The sharing of Economic rent in India.

The Share of Labour (a) Wages. Supply and Demand in relation to Labour. Theories of Wages (a) Minimum subsistence, (b) Standard of Life—(c) Marginal productivity. Combinations of employers and employees in relation to wages.

(b) *Salaries.*—Supply and Demand in relation to acquired knowledge and skill, and exceptional ability.

The Share of Capital: Interest.—Supply and Demand in relation to Capital. The accumulation of Capital. Conversion of capital from unspecialized forms. Interest on loanable capital. Interest on investments. Capitalization. Promotion.

The Share of Enterprise: Profits.—Supply and Demand in relation to business Organization. Profits and the Entrepreneurs. Quasi Rent of net industrial advantage.

The Share of the State: Taxation:—The Community as worker and sharer in the product.

Rent, wages, etc., regarded as *cost of production*. How far these enter into price.

Economic Functions of the State—

Duties and Expenses of Government, Local and Imperial, Local and Imperial Taxation. Methods of raising taxes. The Indian Budget. Loans. The Indian Debt.

Theories of Taxation. Taxation according to benefit, taxation according to ability. Taxation for Revenue only. Incidence of Taxation.

Taxation and International Trade. Free Trade. Retaliation. Imperial Preference, Protection of native industries, Tariffs as part of a policy of national defence or aggrandisement. Commercial treaties.

The State and the Regulation of Industry. Factory Acts and the protection of the worker. Rural indebtedness and its remedies. Migration and emigration. State assistance of Industry.

Public ownership and control. State Socialism.

(For Politics—*Vide* pp. 532—534).

Special Subjects.

Any two of the following subjects:—

I. Politics—

- (i) Political Writings of Burke.
- (ii) Federalism Ancient and Modern.

II. History—

- (i) Unification of Germany.

III Indian History—

- (i) The Mauryan Empire.
- (ii) The Gupta Empire.

(iii) The Vijayanagar Empire.

(iv) Moghul India (1605-1707).

(v) British Indian Administration.

IV. Economics—

(i) Currency and Banking.

(ii) Public Finance.

Text-books for Study and Reference—

I. Politics—

i. Political Writings of Burke.

Burke, Select Works (with Introduction), by E. J. Payne,
Oxford University Press, Vols. 1 and 2.

The Works of Burke. (World's Classics) Oxford
University Press.

Vol. 2. Speeches at his arrival at Bristol and at the
conclusion of the Poll, 1774.

Speech on presenting to the House of Commons
(on Feb. 11, 1780) a plan for the better
security of the Independence of Parliament,
and the Economical Reformation of the Civil
and other establishments.

Vol. 3. Speech at Bristol previous to the elections in
that city, 1780.

Speech at Bristol declining the Poll, 1780.

Speech on Fox's East India Bill, Dec. 1, 1783.

Speech on the motion made in the House of
Commons, February 7, 1771, relative to the
Middlesex election.

Speech on a Bill for shortening the duration of
Parliaments.

Speech on a motion made in the House of
Commons, May 7th, 1782, for a committee to
enquire into the state of the representation
of the Commons in Parliament.

Vol. 5. An Appeal from the new to the old Whigs.

Address to the King.

Address to the British Colonists in North
America.

**526 BOOKS RECOMMENDED FOR STUDY IN [APP.
POLITICS—BRANCH III—FOR B.A. (HONS.) DEGREE
EXAMINATION.**

Letters of Edmund Burke: edited by H. J. Laski (World's Classics), Oxford University Press.

The Political Philosophy of Burke, by J. Maccunn.

Lord Morley: Burke.

ii. Federalism, Ancient and modern.

The scope of study of "Federalism, Ancient and Modern" is indicated by the following books:—

1. Bryce: The American Commonwealth.
2. Bryce: Modern Democracies.
3. Brunet: German Constitution.
4. Brogan: Government of the United States.
5. De Tocqueville: Democracy in America.
6. Calhoun: Government of the U.S.A.
7. Dicey: Law of the Constitution.
8. Nicholas Murray Butler: United States of America.
9. Garner: American Political Ideas and Institutions.
10. Hall: British Commonwealth of Nations.
11. Hamilton, etc.: The Federalist.
12. Holst: Constitutional History of the U.S.A.
13. Kennedy: The Constitution of Canada.
14. Moore: The Constitution of the Commonwealth of Australia.
15. Munro: Governments of Europe.
16. Newton: Federal and Unified Constitutions.
17. Warren: The Supreme Court in U.S.A.
18. Wilson: Congressional Government.
19. Dealey: Our State Constitutions.
20. Hart: Actual Government in the U.S.A.
21. Bonjour: Real Democracy in operation.
22. Adams and Cunningham: The Swiss Confederation.
23. Egerton: Federations and Unions in the British Empire
24. Freeman: History of Federal Government in Greece and Italy.
25. Brooks: Government and Politics of Switzerland.

26. Kerr: Law of the Australian Constitution (Sydney 1925)
27. Lefroy: Canada's Federal System (Toronto 1913).
28. Vincent: Government of Switzerland.
29. Mattern: Principles of the Constitutional Jurisprudence of the German Republic.
30. Oppenheimer: The Constitution of the German Republic.
31. Willoughby: The American Constitutional System.
32. Borden: The Canadian Constitution.
33. Beard: The Supreme Court and the Constitution.
34. Keith: Dominion Autonomy in Practice.

II. History—

- (i) Unification of Germany.

Books for study—

- (1) The Cambridge Modern History—

Vol. X: Chap. xi: The German Federation, 1815-40.
Chap. xii: Literature in Germany.

Vol. XI: Chap. iii: Liberalism and Nationality in Germany and Austria.

Chap. vi, vii: Revolution and reaction in Germany (1848-52).

Chap. xv: Austria, Prussia and the Germanic Confederation.

Chap. xvi: Bismarck and German Unity.

• Chap. xxi: The Franco-German War.

- (2) A. W. Ward: Germany (The Cambridge Historical Series), Vols. I & II 1815-1871.
- (3) Lipson. Europe in the Nineteenth Century.
- (4) Marriott and Robertson: The Evolution of Prussia, the Making of an Empire (1915).
- (5) Headlam: Bismarck and the Foundation of the German Empire (Heroes of the Nations).
- (6) Hearnshaw: Main Currents of European History (1815-1915).

**528 BOOKS RECOMMENDED FOR STUDY IN [APP.
HISTORY—BRANCH III—FOR B.A. (HONS.) DEGREE
EXAMINATION.**

Books for further study and reference—

- (1) G. A. Fyffe: *The History of Modern Europe.*
- (2) Seeley: *Life and Times of Stein or Germany and Prussia in the Napoleonic Age*, 3 vols.
- (3) Malleson: *The Life of Prince Metternich* (1888).
- (4) Karl Marx: *Revolution and counter-Revolution in Germany*, edited by E. Marx Aveling (1896).
- (5) Acton: *The Causes of the Franco-Prussian War—in his 'Historical Essays and Studies* (1907).
- (6) Bismarck, the Man and the Statesman—An Autobiography.
- (7) Buch: *Bismarck; Some Secret Pages of his History.*
- (8) Schwill: *The Making of Modern Germany.*
- (9) Treitschke: *History of Modern Germany.*
Translation by E. & C. Paul in 6 vols. Vols. I to IV.
- (10) H. Von Sybel—*Germany under Wilhelm I.*
Vols. I to III—Eng. Trans. by L.M. Perin & G. Bradford, New York (1890).
- (11) J. Ward: *Experience of a Diplomat, being Recollections of Germany founded on Diaries kept during the years 1840 to 1870* (London 1872).
- (12) Maurice: *The Revolutionary Movement of 1814-49 in Italy, Austria-Hungary and Germany* (London, 1887).
- (13) G. P. Gooch: *History and Historians in the 19th Century* (1913) (specially useful on the German Historical School).

III. Indian History—

- i. The Mauryan Empire.
(Books will be prescribed later)
- ii. The Gupta Empire.

Books for Study—

- (1) F. E. Pargiter: *Dynasties of the Kali Age.*
- (2) Fleet: *Gupta Inscriptions (Corpus Inscriptionum Indicarum III).*
- (3) Allan: *Catalogue of Coins in the British Museum: Gupta Coinage.*
- (4) Rapson: *Catalogue of Coins in the British Museum, Andhra, etc*

IV] BOOKS RECOMMENDED FOR STUDY IN 529
 INDIAN HISTORY—BRANCH III—FOR B.A. (HONS.)
 DEGREE EXAMINATION.

- (5) Sir John Marshall: Guide to Sanchi.
- (6) Vincent Smith: History of Fine Arts in India (relevant chapters only).
- (7) S. K. Ayyangar: Vakatakas and their place in Indian History.
- (8) Smith's Vakatakas: J. R. A. S. 1914.
- (9) Jouveau-Dubreuil: A History of the Deccan.
- (10) Legge: Fa Hien.
- (11) Bhandarkar: Peep into the Early History of India.
- (12) H. C. Ray Chaudri: Political History of Ancient India, Parikshit to the Gupta Empire.
- (13) S. K. Ayyangar: Samudragupta and Chandragupta II.
- (14) Hun Invasions: J. R. A. S. 1908, Hoernle's article on Yasodharman.
 J. B. Br. R. A. S. XIX and XXIV
 Modi and Pataka.
- (15) S. K. Ayyangar: Origin and Early History of the Pallavas

or

R. Gopalan's History of the Pallavas of Kanchi (earlier part).

For further reading—

- (1) A. S. R. 1903—4 Basarh Seals.
- (2) Bhitari Seal of Kumaragupta; J. A. S. B. LVIII.
- (3) Inscriptions of Kumaragupta I. J. A. S. B. V. New Series.
- (4) Two Vakataka Grants J. A. S. B. XX New Series. Ep. Ind. XV.
- (5) Damodrapur Plates: Ep. Ind. XV.
- (6) Samudragupta Ins. Ind. Antiq. 1913.
- (7) V. A. Smith: Gupta Chronology, Indian Antiquary. 1902.
- (8) Western Satraps: J. R. A. S. 1890 and 1899. Bindulph.
- (9) Kay's Indian Mathematics.

**530 BOOKS RECOMMENDED FOR STUDY IN [APP.
INDIAN HISTORY—BRANCH III—FOR B.A. (HONS.)
DEGREE EXAMINATION.**

iii. The Vijayanagar Empire—

R. Sewell: *A Forgotten Empire* (Reprint, 1924, 10 sh.).

S. Krishnaswami Ayyangar: *South India and her Muhammadan Invaders.*

Major King: *Burhan-i-Ma'asir* (Reprinted from *the Indian Antiquary*—Vol. 28).

S. Krishnaswami Ayyangar: *Sources of Vijayanagar History.* Abdur Razzak: *An account of his voyage to India* (Chapter on Vijayanagar).

R. H. Major: *India in the 15th Century* (Trans.) (Hakluyt Society). Failing this, Extract in Elliot and Dowson's *History of India as told by her own Historians*).

S. Krishnaswami Ayyangar: *A little known chapter of Vijayanagar History.*

H. Krishna Sastri: *Three articles on the Dynasties of Vijayanagar*—A. S. R. 1907-08, 1908-09 and 1911-12.

Longhurst: *Humpi Ruins.*

Briggs: *Ferishta.*

M. Longworth Dames: *Book of Duarte Barbosa*—chapters relating to Vijayanagar.

Hultzsch: *Coins of Vijayanagar* (in the *Indian Antiquary*).

S. Krishnaswami Ayyangar and R. Satyanatha Ayyar: *The Nayaks of Madura*—Introduction and early chapters up to Chokalinga Nayaka.

For Consultation:—

Epigraphist's reports of Madras and Mysore.

or

Rangachari's Inscriptions of the Madras Presidency.

Danvers—Portuguese India.

Purchas: His Pilgrims, Volume X.

iv. Mughal India, 1605 to 1707—

M. Elphinston: History of India, Ed. E. B. Cowell.

H. G. Keene: History of Hindustan.

Pringle Kennedy: History of the Great Mughals, 2 Vols.

Lane Poole: Aurangzeb (Rulers of India Series).

IV] BOOKS RECOMMENDED FOR STUDY IN 531
INDIAN HISTORY—BRANCH III—FOR B.A. (HONS.)
DEGREE EXAMINATION.

Jadunath Sarcar: History of Aurangzeb (5 Vols. so far published).

Sir William Hunter: History of British India. 2 Vols.

Duff: History of the Mahrattas, Vol. 1 (3 Vols., Cambridge & Co., Calcutta, or better Edwardes' edition, Oxford University Press).

Ranade: Rise of the Mahratta Power.

W. Irvine: Life of Aurangzeb (Indian Antiquary reprint).

Memoirs of Jehangir: Trans. by Rogers and Beveridge, 2 Vols. Royal Asiatic Society's Publications.

Sir Henry Elliot: History of India, as told by her own Historians, Vols. VI and VII.

For Consultation only:—

Sir Thomas Roe (Ed. by W. Foster, 2 Vols.).

Manucci: Storia do Mogor (Trans. by Irvine, 4 Vols.).

Bernier: Travels in the Mughal Empire (Vincent Smith's edition, Oxford University Press).

Tavernier: Travels in India (Ball's edition, revised by W. Crookes, 2 Vols. Oxford University Press).

David Macpherson: History of European Commerce with India.

W. Foster's Letters received by the East India Company from its Servants in the East.

J. Talboys Wheeler: Madras in Olden Times.

Jadunath Sarcar: The India of Aurangzeb.

J. H. Billimoria: Letters of Aurangzeb.

Gemelli Careri's Travels (Haklyut Society).

Ma'asir-ul-Umara: English translation in the Bibliotheca Indica.

v. British Indian Administration:—

Kaye: The Administration of the East India Company.

Ilbert: Government of India.

Ramsay Muir: The Making of India.

Mukerji: Indian Constitutional Documents, 2 Vols.

Cowell: History and Constitution of the Courts and Legislative Authorities in India.

Curtis: Dyarchy.

Ilbert: The New Constitution of India.

Chailley: Administrative Problems of the British in India.

Keith: Speeches on Indian Policy.

Archbold: The Indian Constitution.

IV. ECONOMICS—

I. CURRENCY AND BANKING—

*Books recommended—The same as for Br. IV (Hons.)—
Vide page 535.*

II. PUBLIC FINANCE—

*Books recommended—The same as for Br. IV (Hons.)—
Vide page 536.*

POLITICS.

BRANCHES III AND IV.

The course shall comprise (a) a study of the development of political thought from Plato and Aristotle to the present day and (b) a study of the constitutions of the important states at the present day. The following books are recommended:—

A.—Political Theory.

Dunning: A history of political theories, Vols. I to IV.

Gettell: A history of political thought.

Joad: Modern political theory.

Laski: A grammar of Politics.

McIver: The Modern state.

Pollock: An introduction to the study of Politics.

Miss Follett: The New state.

M. Ratnaswami: The making of the state.

Ivor Brown: English Political theory.

Burns: Political ideals.

Bonn: The crisis in European Democracy.

Dicey: Law and public opinion in England.

Gierke: Political theories of the Middle Ages.

Hearnshaw: Social and political ideas of some great mediæval thinkers.

Roger Chance: Until philosophers are kings.

Willoughby: Political theories of the ancient world

Laski: From Locke to Bentham (H.U.S.)

Barker: From Spencer to present day (H.U.S.).

Ward: Sovereignty.

B.—Comparative Politics.

Jenks: The State and the Nation.

Sidgwick: The Development of European Polity.

Glötz: The Greek City.

Lucas: Greater Rome and Greater Britain.

Bryce: Modern democracies, Vols. I and II.

Munro: Governments of Europe.

Munro: The Government of U.S.A.

Muir (Ramsay): How Britain is governed.

Marriott: Mechanism of the modern state, Vols. I and II.

Headlam Morley: The New Democratic constitutions of Europe.

Newton: Federal and unified constitutions.

Strong, C. F.: Modern Political constitutions.

Dicey: Law of the constitution.

Keith: Sovereignty of the British Dominions.

Keith: Democratic Governments of the British Empire.

Hewart: The New Despotism.

McLaughlin: Newest Europe—(Longman's).

Villari: The Fascist Experiment.

Eppstein: Ten years' Life of the League of Nations.

Burgess: Recent changes in the American constitution.

Marriott: Second Chambers (Revised edition).

Roberts: Functions of an English second Chamber.

A. B. Keith: A Constitutional History of India.

Eddy and Lawton: The New Indian Constitution.

Panikkar: Indian States and the British Crown.
 Bannerjee: The Indian constitution.
 Sir C. Petrie: A History of Government.
 Hattersley: A Short History of Democracy.
 Battaglia: Dictatorship on Trial.
 The Butler Committee Report.
 Government of India Act, 1935.
 The Annual Register (after 1919).
 The Round Table Conference Papers.
 B. Shiva Rao: Select constitutions of the world compiled
 for the Dail Eireann.
 Buell: New Governments in Europe.
 Buell: Chase and Valeur: Democratic Governments in
 Europe.
 F. A. Ogg: European Governments and Politics.

Branch IV.
ECONOMICS.
ECONOMICS I.

Books recommended.—

Marshall—Principles of Economics.
 Taussig—Principles of Economics (3rd Edition), 2 Vols.
 Devas—Political Economy.
 Dalton—Public Finance.
 Indian Year Book.

ECONOMICS II.

Books recommended.—

Taussig—International Trade.
 Marshall—Industry and Trade.
 Cannan—A Review of Economic Theory.
 Gide and Rist—History of Economic Doctrines.
 A. Gray: The Development of Economic Doctrine (Long-
 mans).
 A selected Economic Classic, (Selections from Ricardo-
 Economic Classics Series edited by W. J. Ashley).

*Note:—*The question paper in Economics II will be set in two parts. Part I—A comparative study of Modern Economic Theory with special reference to a prescribed classic. Part II—Advanced questions in the present organisation of Industry and Trade, including International Trade.

ECONOMIC HISTORY.

A general survey of the development of industry, trade and agriculture in Great Britain and India chiefly from 1700 A.D. and in France, Germany, and U.S.A. from 1850.

Books recommended.—

Knowles—Industrial and Commercial Revolutions in Great Britain during the 19th Century.

Knowles—The Economic Development of British Overseas Empire.

Clapham—The Economic Development of France and Germany.

Bogart—Economic History of the United States.

Dutt—The Economic History of India in the Victorian Age.
 Imperial Gazetteer, Vols. III and IV.

Anstey: Economic Development of India.

Special Subjects.

Any two of the following subjects:—

1. Banking and Currency.
2. Public Finance.
3. Social Economics (including Labour Problems).
4. Rural Economics (including Co-operation).
5. Indian Land Tenures.

Books for study and reference.—

1. *Banking and Currency* (includes money, credit, foreign exchanges and prices).

Books recommended—

Conant: Money and Banking.

Kemmerer: Modern Currency Reforms.

Fisher: The Purchasing Power of Money.

Lavington: The English Capital Market.

Cassel: The World's Monetary Problems.

Duguid: The Stock Exchange.

Marshall: Money, Credit and Commerce.

Keynes, J. M.: A Tract on Monetary Reform.

Reports and Evidence of the Indian Currency Committees.

Annual Reports on the Operations of the Currency Department of the Government of India.

Statistical tables relating to Banks in India (Annual).

Coyajee, J. C.: The Indian Currency System.

Flux: Foreign Exchanges.

Hawtrey: Currency and credit.

Report of the Indian Central Banking Enquiry Committee.

Report of the Macmillan Committee on Finance and Industry, 1931.

P. B. Whale: Joint Stock Banking in Germany.

2. *Public Finance* (including the economic functions of the State, the raising and spending of taxes and public loans, and the regulation of tariffs).

Books recommended—

Bastable: Public Finance.

Adams: Finance.

Stamp: The Principles of Taxation.

Seligman: Essays in Taxation.

Seligman: Shifting and Incidence of Taxation.

Shah: Sixty Years of Indian Finance.

The Budget Statements of the Government of India since 1920.

Findlay Shirras: The Science of Public Finance.

Indian Taxation Committee Report, 1926.

Pigou: A Study in Public Finance.

Report of the Colwyn Committee on National Debt and Taxation, 1927.

3. *Social Economics* (including Labour Problems).

Books recommended—

Webb: History of Trade Unionism.

De Montgomery: British and Continental Labour Policy.

Tillyard: The Worker and the State.

Cole: Self-Government in Industry.

O'Brien: Labour Organization.

Survey of Industrial Relations. (Committee on Trade and Industry).

Lindsay: Karl Marx's Capital.

Report of the Indian Factory Labour Commission, 1908.

Report of the Indian Industrial Commission.

Publications of the Government of India, Labour Bureau.

The Labour Gazette, Bombay (Monthly).

Broughton: Labour in Indian Industries.

Census of India, 1931, India and Madras, Chapters on Industries and occupations.

Shirras: Report on an enquiry into the wages and hours of labour in the Cotton Mills Industry.

Report of the Royal Commission on Labour in India.

4. *Rural Economics* (including co-operation).

Books recommended—

Carver: Agricultural Economics.

Nicholson: Report on the Introduction of Land and Agricultural Banks, Vol. I.

Leake: Agriculture in the United Provinces.

Slater: Some South Indian Villages.

Srinivasaraghava Ayyangar: Memorandum on Forty Years' Progress in the Madras Presidency.

Jack: Economic Life of a Bengal District.

Darling: The Punjab Peasant in Prosperity and Debt.

Baden-Powell: A short Account of Land Revenue and its Administration.

Report of the Royal Commission on Indian Agriculture.

Reports of the Indian Famine Commissions of 1880 and 1901.

5. *Indian Land Tenures* (includes the development and main features of the principal systems of land tenure in India).

Books recommended—

Baden-Powell: A Short Account of the Land Revenue and its Administration.

Land Revenue Resolution of the Government of India (1902) and connected papers.

Arbuthnot: Selections from the Minutes of Sir T. Munro.

Seton Kerr: Marquess Cornwallis.

Bradshaw: Sir Thomas Munro.

Temple: James Thomason.

Srinivasaraghava Ayyangar: Memorandum on Forty Years' Progress of the Madras Presidency.

Branch V.*

POLITICS.

1. POLITICAL THEORY:—

Classic—Plato's Republic by A. H. Lindsay (Dent & Co.).

Other books recommended:—

Willoughby: Nature of the State.

Willoughby: Ethical Basis of Political Authority.

McIver: The Modern State.

Hobhouse: The Metaphysical Theory of the State.

Lord: The Principles of Politics.

W. F. Willoughby: Government of Modern States.

R. K. Wilson: The Province of the State.

Montague: The limits of individual liberty.

Sidgwick: Elements of Politics—Part I.

Laski: A Grammar of Politics.

Beni Prasad: The State in Ancient India.

Beni Prasad: The Theory of Government in Ancient India.

* *Note*:—The new Branch—Branch V—Politics—was introduced with effect from the academic year 1937-38.

2. HISTORY OF POLITICAL THOUGHT:—

For Historical Background.—

Fisher: History of Europe.

Other books recommended for study.—

Dunning: Political Theory, Vols. I to IV.

Gettell: History of Political Thought.

McIlwain: The Growth of Mediaeval Political Thought
in the West.

Hearnshaw: Some Social and Political Ideas of Some
Great Mediaeval Thinkers.

Ivor Brown: English Political Theory.

Joad: Modern Political Theory.

Goad & Curry: The Corporative State.

3. POLITICAL INSTITUTIONS:—

Descriptive and Historical.—

Hammond: Bodies Political and their Governments
(New edition).

Wilson: The State.

Lowell: Government of England—Vols. I and II.

Munro: Governments of Europe.

Beck: Constitution of the U.S.A.

Other books recommended—same as for Branches III and
IV, viz., Section B, Comparative Politics.

4. ECONOMICS—In common with Branch III Honours. (*Vide*
pages 522—524).

5. HISTORY OF ADMINISTRATIVE AND CONSTITUTIONAL DEVELOPMENT
IN INDIA:—

Books recommended.—

Cambridge History of India: I chh. 12, 19.

V chh. 10, 11, 18, 23, 25, 26, 27, 31, 32.

VI chh. 1-7, 11-21, 27-33.

Imperial Gazetteer of India, Vol. IV.

S. V. Venkateswara: Indian Culture Through the Ages,
Vol. II.

S. K. Ayyangar: Hindu Administrative Institutions.

Dikshitar: Mauryan Polity.

R. D. Banerji: The Age of the Imperial Guptas, Chapter II.

K. A. Nilakanta Sastri: Studies in Cola History and Administration (Omitting I and II).

K. A. Nilakanta Sastri: Colas: Chapters IV and XVII—end.

N. Venkataramanayya: Studies in the Third Dynasty of Vijayanagara, Part II.

Altekar: Rashtrakutas (Administrative Chapters).

Ashraf, K. M.: J.A.S.B. 1935, Life and Conditions of the People of Hindustan (1200—1500).

Ibn Hassan: Central Structure of the Mughul Empire.

Sarkar: Mughul Administration.

Keith: Constitutional History of India (1600—1935).

Seton: The India Office.

Ghose: Public Administration in India.

Ilbert: Government of India (Historical Chapters).

Strachey: India—Its Administration and Progress.

N. Ghosh: Comparative Administrative Law—Books II and III.

6. OPTIONAL SUBJECTS:—

(a) *Public Administration*—Principles and Practice (with documents).

L. D. White: Introduction to the study of Public Administration.

Willoughby: Principles of Public Administration.

Goodnow: Comparative Administrative Law.

H. Finner: The British Civil Service.

Robson: The Development of Local Government.

P. Ashley: Local and Central Government.

Simon Commission Report.

Montague-Chelmsford Report.

Report of the Decentralization Committee.

Haldane's Report on the Machinery of Government.

Thomas: Report of the Committee on the reorganisation of the Bombay Government.

(b) *A period or topic of British Indian Administration* (with Documents).

(1) The Administration of Lord Cornwallis (Books to be prescribed later).

(2) Local Self-Government in India (Books to be prescribed later).

7. ESSAY.—In common with Branches III and IV.

Branch VI—Two Languages other than English, 1938.

MARATHI, 1938.

Set books for Additional Paper in Composition.—

1. Moropant Charitra and Kavya Vivechan by L. R. Panjarkar, B.A.
2. Mayur Kavya Vivechana by Banahatti, M.A., LL.B.
3. Bhasha Shastra ani Marathi Bhasha by Kulkarni.
4. Kelkar Krit Lekhasangraha, Part II, pages 126—289, Part III—Essays 1, 2, 9, 10, 11, 12 and 13 and Part IV—Essays 1, 2, 3, 10, 14 and 17.
5. Nivadak Lekha by N. G. Chapekar, B.A., LL.B.
6. Samskrit Kavi Panchaka by Chiplunkar.

For Comparative Grammar—Gaurian.

Text-books recommended for study:—

1. Dr. R. G. Bhandarkar's Wilson Philological Lectures (1877) on Sanskrit and Prakrit Languages derived from it. (Bhandarkar's Research Institute, Poona).
2. Dr. Gune's Introduction to Comparative Philology—Part I and Part V.
3. History of Marathi Literature by Nicol Macnicol, M.A., D.Litt., Poona. (The Heritage of India Series).

ORIYA, 1938.

The same as under Group (v) of the B.A. Degree Examination of 1938 with the omission of the books prescribed under the related subjects and languages and with the addition of the following books for advanced composition paper:—

1. Aryajeevana by Nilakantha Das, M.A.
2. Prachina Utkala by Jagabhandu Simh.
3. Bayi Mahanty Panji by Gopalachandra Praharaja,

**542 TEXT-BOOKS IN FRENCH, TAMIL, TELUGU [APP.
AND KANNADA FOR BRANCH VI—FOR B.A. (HONS.)
DEGREE EXAMINATION, 1938.**

FRENCH, 1938.

Set books for Additional Paper in Composition.

Henri Bordeaux: La maison morte (Librairie Plon, 8, Rue Garanciere, Paris).

Hemon: Maria Chapdelaine (Cambridge Univ. Press).

Henri Ghéon: La Parade du pont du Diable.

L'impromptu du Charcutier.

La fille du Sultan et le bon jardinier.
(Librairie Brunet, Arras, France).

TAMIL, 1938.

Set books for Additional Paper in Composition:—

1. Pattinappalai-araycchi by Swami Vedachalam, Pallavaram.

2. Tamil Sangam Age by Mahamahopadhyaya Dr. V. Swaminatha Ayyar. (Madras University Publication—C. Coomaraswami Naidu & Sons, G. T., Madras).

3. Essay on Tamil by T. Chelvakesavaraya Mudaliyar, M.A. (T. P. Alagan, Perambur, Madras).

TELUGU, 1938.

Set books for Additional Paper in Composition.—

1. Narasabhupaliyamu.

2. The works of Pingali Surana.

KANNADA, 1938.

The same as those prescribed for Part III, Group V of the B.A. Degree Examination for 1938.

Set books for Additional Paper in Composition.—

1. Karnataka Gatha Vaibhava by V. B. Alur, B.A., LL.B., (Author, Dharwar).

2. Sarvajna Padyagalu, edited by C. D. Uttangi (Author, Haveri, Dharwar District).

3. Kavi Samaya by M. A. Ramanuja Ayyangar (Kavyakalanidhi Office, Mysore).

4. Nataka Kale by Atmaram Sastri (Bala Sahitya Mandala, Mangalore).

**IV] TEXT-BOOKS IN MARATHI, ORIYA, FRENCH AND 543
TAMIL FOR Br. VI—B.A. (HONS.) DEGREE EXAMN., 1939.**

MALAYALAM, 1938.

Set books for Additional Paper in Composition:—

Poetry.—

1. Gouricharitam—Prabhandam (Secretary of the Malayalam Improvement Committee, Trichur).
2. Kalakeyavadham by Kottayath Thampuram (any Publisher).
3. Girija Kalyanam Kilipattu by Unnayi Varier. (Government Press, Trivandrum).

Prose.—

Surasimhan by Karthikai Thirunal Thampuratti, Anantapuram Kottaram, Harippad, Travancore.

ARABIC, PERSIAN AND URDU, 1938.

Set books for Additional Paper in Composition:—

Arabic.—

Muqaddima-i-Ibni Khaldun.

Persian.—

Iran Nameh excluding Old Persian.

Urdu.—

Fasanai-Azad, Vol. I.

Tahzibul Akhlaq, Vol. II.

Branch VI—Two Languages other than English, 1939.

MARATHI, 1939.

The same as for 1938 with the change—that (1) Kelkar-Krt-lekhasangraha, Part II and Samskrit Kavi Panchak by Chiplunkar be omitted; that (2) Adhunik Kavi Panchak by Madkholker be added; and (3) that in "Bhasha Sastra ani Marathi-Bhasha by K. P. Kulkarni", only Chh. X, XI and XII be prescribed instead of the whole book.

ORIYA, 1939.

The same as for 1938.

FRENCH, 1939.

The same as for 1938.

TAMIL, 1939.

The same as for 1938.

TELUGU, 1939.

The same as for 1938.

KANNADA, 1939.

The same as for 1938.

MALAYALAM, 1939.

The same as for 1938.

ARABIC, PERSIAN AND URDU, 1939.

Will be prescribed later.

Branch VI—Two Languages other than English, 1940

MARATHI, 1940.

The same as for 1939.

ORIYA, 1940.

The same as for 1939.

FRENCH, 1940.

The same as for 1939.

TAMIL, 1940.

The same as for 1939.

TELUGU, 1940.

The same as for 1939.

KANNADA, 1940.

The same as for 1939.

MALAYALAM, 1940.

Set books for Additional Paper in Composition.

1. Bhasha Naishada Champu edited by P. Padmanabha Menon, B.A., B.L., Ernakulam, Cochin State.
2. Kirmira Vadham—Kathakali by Kottayatthu Thampuran.
3. Akbar by Kerala Varma (B. V. Book Depot and Printing Works, Trivandrum).
4. Girijakalyanam—Kilipattu by Unnayi Varier (Travancore Government Publication).

ARABIC, PERSIAN AND URDU, 1940.

Will be prescribed later.

Branch VI—Two Languages other than English, 1941.

MARATHI, 1941.

The same as for 1940.

ORIYA, 1941.

The same as for 1940.

TAMIL, 1941.

Set Books for Additional Paper in Composition.—

1. Sanga Kalattamilum Pirkalattamilum by Dr. V. Swaminatha Ayyar.
2. Essay on Tamil by T. Chelvakesavaraya Mudaliar.
3. Studies in Tamil Literature by V. R. R. Dikshitar. (Madras University Publication).
4. Mullaippattu Araycchi by Swami Vedachalam.

TELUGU, 1941.

The same as for 1940.

KANNADA, 1941.

The same as for 1940.

MALAYALAM, 1941.

(Text-books will be prescribed later).

ARABIC, PERSIAN, AND URDU, 1941.

(Text-books will be prescribed later).

B.A. (Hons.) Degree Examination (Final) 1938.

Branch VII.

ENGLISH LANGUAGE AND LITERATURE.

Division (a).—

Old English:—

Anglo-Saxon Reader by A. J. Wyatt, Cambridge University Press.

For Detailed Study:—

Selections 1, 2, 3, 7, 11, 12, 14, 20, 24, 26, 27, 28, 34.

Middle English:—

Middle English Reader by O. F. Emerson, (Macmillan).

The following selections:—

Part I-A—1, 2.

B—1, 6, 7

Part II-A—1, 3, 5, 6.

B—2, 4, 5, 7, 8

C.—3.

Chaucer: The Prologue, the Nun's Priest's Tale, the Pardoner's Tale.

Sir Gawayne and the Green Knight. Ed. Tolkien and Gordon, lines 1105 to the end. (Oxford University Press).

Division (b).—

Shakespeare:—

Love's Labour's Lost, Henry IV—Part I, As You Like it, King Lear, Tempest.

Modern Literature I—Before 1660.

Poetry:—

Wyatt, Surrey: Selections in English Verse—Vol. I. (W. Peacock—Worlds' Classics).

Ballads: Selections in Peacock—Volume 2, pp. 434—556.

Daniel, Drayton, Shakespeare: Selections in Peacock—Vol. I, omitting pp. 356—414.

Spenser: Faerie Queene, Book I* and Selections in Peacock, pp. 209—245.

Prose:—

Mandeville, Malory, Berners, More, Hooker in Craik's Selections in English Prose, Vol. I.

Sidney: Apology for Poetry.*

Bacon: First Twelve Essays,* New Atlantis.

Browne: Religio Medici.

Milton: Areopagitica.

Drama:—

Marlowe: Dr. Faustus, Edward II.*

Kyd: The Spanish Tragedy.

Jonson: Every man in His Humour.

Bartholomew Fair.

Beaumont & Fletcher: Philaster.*

Massinger: A New way to pay Old Debts.

Dekker: The Shoe Maker's Holiday.

Webster: The White Devil, The Dutchess of Malfi.*

Modern Literature II, 1660—1780.

Poetry:—

Milton: Paradise Lost—Books* I and 4, and

Selections in Peacock—Vol. 2, pp. 217—280.

Campion, Donne, Herbert, Jonson, Crashaw, Marvell,

Vaughan: Selections in Peacock—Vol. 2.

Dryden: Absalom and Achitophel*, MacFlecknoe,

Pope: The Rape of the Lock* and Selections in Peacock—
Vol. II.

Johnson, Gray, Collins, Goldsmith, Blake, and Burns in
Peacock.

Thomson: Winter.

Prose:—

Bunyan: Pilgrim's Progress, Part I.

Dryden: Preface to the Fables.*

Swift: Gulliver's Travels, Tale of a Tub, Battle of the Books.*

Addison: Selections, Ed. Lobban.

Richardson: Clarissa.

Fielding: Tom Jones.

Johnson: Preface to Shakespeare;* Milton, Dryden, Pope.

Selections from Great Letter Writers (Blackie) Nos. 23 to 100

Burke: The French Revolution.

Gibbon: Book I. The Eternal City—Rawlinson & Dunlopp
(Longmans).

Drama:—

Dryden: All for Love.

Congreve: The way of the World.*

Steele: The Conscious Lovers.

Goldsmith: The Good Natured Man.

Sheridan: Rivals.

Modern Literature III—After 1780.

Poetry:—

Wordsworth: Tintern Abbey,* Immortality Ode,* Ode to Duty* and Selections in Peacock.

Coleridge: Selections in Peacock.

Keats: The Odes* and Selections in Peacock.

Rossetti: Selections in Peacock.

Browning: Rabbi Ben Ezra, Saul,* Abt Vogler*, Andrea del Sarto, Pippa Passes.

Tennyson: In Memoriam.

Arnold: The Scholar Gipsy,* Thyrsis.*

Morris: Defence of Guinevere and other Poems.

Prose:—

Scott: The Heart of Midlothian.

Austen: Pride and Prejudice, Emma.

Lamb: Essays of Elia,* First Series; Letters.

Hazlitt: The Spirit of the Age.

Newman: The Idea of a University.

Pater: Appreciations.

Stevenson: Familiar Studies of Men and Books.

Thackeray: Vanity Fair.

Meredith: Richard Feverel, The Egoist,
Essay on Comedy.*

Hardy: Tess of the D'urbervilles, Return of the Native.

Drama:—

Arnold: *Merope*.*

Shaw: *St. Joan*.

Drinkwater: *Abraham Lincoln*.

Swinburne: *Atalanta in Calydon*.

Division (c)—Special Period—

1. *Elizabethan Literature (1558 to 1637)*.

I. *Drama*.—Kyd: *The Spanish Tragedy*.* Greene: *Friar Bacon and Friar Bungay*. Marlowe: *Dr. Faustus*.* Ben Jonson: *The Alchemist*, *Volpone*. Beaumont and Fletcher: *The Faithful Shepherdess*, *The Knight of the Burning Pestle*. Webster: *The Duchess of Malfi*.* Dekker: *A Shoemaker's Holiday*. Heywood: *A Woman Killed with Kindness*. Middleton: *The Witch*. Massinger: *A New Way to pay Old Debts*.* Shirley: *The Traitor*.

II. *Poetry*.—Spenser: *The Faerie Queene*, Books I* and II. *An Anthology of Poetry of the Age of Shakespeare*, edited by W. T. Young (The Cambridge Press). Shakespeare: *Sonnets*.* Marlowe: *Hero and Leander*, *Sestiads I and II*.

III. *Prose*.—Lyly: *Euphues, The Anatomie of Wit*. Ascham: *The Schoolmaster*, Book II.* Hakluyt: *Voyages of Elizabethan Seamen*, edited by E. J. Payne, First Series. Raleigh: *The Last Fight of the Revenge*. Hooker: *Ecclesiastical Polity* Book I. Bacon: *The New Atlantis*; *Henry VII*.* Dekker: *The Gull's Horn Book*.

2. *The Age of Milton and Dryden*.

(Set books will be announced later, if required.)

3. *The Age of Pope and Johnson*.

Prose—

Defoe: *Captain Singleton*.

Addison: *The Coverley Papers**—Edited by O. Myers (George Harrap).

Swift: *Selections** in the Scott Library (Omitting the *Battle of the Books*).

Richardson: *Pamela*.

Fielding: *Tom Jones*.

Sterne: *A Sentimental Journey*.

Smollett: *Humphrey Clinker*.

Gibbon: *The Crusades*.*

Burke: *Speeches**—Edited by F. G. Selby (Macmillan).

A Shorter Boswell: Edited by J. Bailey (Thomas Nelson & Sons).

Johnson: *Life of Milton*.

Walpole: *Letters* (Bohn's Classics).
The Castle of Otranto.

Goldsmith: *She Stoops to Conquer*.*

Sheridan: *The School for Scandal*.

Miss Burney: *Evelina*.

Poetry—

Pope : *The Essay on Criticism*; *The Rape of the Lock*.*

The Epistle to Augustus;* *The Epistle to Dr. Arbuthnot*.

Gay: *Trivia*. *The Beggar's Opera*.

Churchill, Smart, Thomson*: *Selections in Wards English Poets*.

*The Poetical Works of Collins** and *Gray**—Edited by A. L. Pool (Oxford).

Johnson: *The Vanity of Human Wishes*; *London*.

Cowper: *The Task*.

Goldsmith: *Traveller**, *The Deserted Village*, *Retaliation*.

4. *Wordsworth and his Contemporaries*.

Poetry—

Wordsworth: *The Prelude*.* Coleridge: *The Ancient Mariner*, *Christabel*, *Dejection*.* Scott: *Marmion*, *Lay of the Last minstrel*. Campbell: *Ye Mariners of England*, *Battle of the Baltic*. Shelley: *Prometheus Unbound*,* *Adonais*.* Keats: *Endymion*.* *Eve of St. Agnes*, *Isabella*. Byron: *Childe Harold*, Cantos 1 to 4; *Don Juan*, Cantos 1 to 4. Southey, Landon, Moore, *Selections in Ward's English Poets*.

The Drama—Shelley: *The Cenci*. Byron: *Manfred*.

Prose.—Coleridge: *Biographia Literaria*. Wordsworth: *Preface to the Lyrical Ballads*.* Hazlitt: *The English Poets, Essays on the Comic Writers*. Lamb: *Essays of Elia and Critical Essays*, edited by Anger. Landor: *Imaginary Conversations** (Blackie & Son) Indian edition. De Quincey: *Confessions of an Opium Eater*. Shelley: *Defence of Poetry*.* Southey: *Life of Nelson*. Cobbet and Leigh Hunt: *Selections in Craik's English Prose*, Vol. 5.

The Novel.—Jane Austen: *Pride and Prejudice*, *Emma*, Lytton: *Last Days of Pompeii*. Scott: *Kenilworth*, *Rob Roy*, *Quentin Durward*. Peacock: *Melincourt*.

5. *Tennyson and his Contemporaries*.

(Set books will be announced later, if required.)

6. *Indo-Germanic Philology with special reference to Sanskrit*.

A Sanskrit Reader, by C. R. Lanman (Ginn & Co.).

A Sanskrit Grammar for Beginners. New edition, by A. A. Macdonell (Longmans).

A Sanskrit Primer, by G. D. Perry (Ginn & Co.).

The following books indicate the character and scope of the course:—

A. Thumb: *Handbuch der Sanskrit*, Vol. I.

C. G. Uhlenbeck: *A Manual of Sanskrit Phonetics*.

Loewe: *Germanic Philology*, English Translation by Jones.

L. Armitage: *Introduction to Old High German Grammar*.

Giles: *A Short Manual of Classical Philology for Classical Students*.

L. Bloomfield: *An Introduction to the study of Language*—English Edition (G. Bell & Sons, London).

Note.—Candidates are required to show a detailed knowledge of the books marked with an asterisk.

Branch VIII.

SANSKRIT LANGUAGE AND LITERATURE, 1938

GENERAL PART.

Śiddhānta-kaumudī: (a) *Pūrvārdha*, from *Strīpratyayaprakaraṇa* to the end of *Apatyādhikāra* in the *Taddhitaparakriyā*.

(b) *Uttarārdha*, the whole omitting *Upādi-prakarana*.

Vidyānātha : Prātāparudra-yaśo-bhūṣaṇa.

Ṛg Vēda: Macdonell's Vēdic Reader, hymns I to X together with
Sāyana's Upōdghāta to his Ṛg-Bhāṣya and the corres-
ponding passages (I to X) in Sāyana's Com-
mentary on the Ṛg Vēda. (Oxford University Press).

Yāska: Nirukta, Naighaṇṭuka-kāṇḍa, Chapter II.

Mṛcchakaṭika: by Śūdraka.

Śrī Harṣa: Naiṣadhiyacarita, Cantos IV, V and VI.

Bāṇa's Kādambarī—from the Acchōdasarōvarṇana to the end of
the Pūrvabhāga.

*In connexion with Branch VIII of the B.A. (Honours) Degree
Examination, the attention of students is invited to the following
books, though it must be distinctly understood that they are not
prescribed as text-books.*

Science of Language, History of the Sanskrit Language
and History of Sanskrit Literature.

Books recommended for study—

Jespersen: Language, its origin, theory and development.

Giles: Short Manual of Comparative Philology for classical
students (Macmillan).

Tucker: Introduction to the Natural History of Language
(Blackie).

Sweet: The History of Language (Temple Primers).

Bloomfield: Introduction to the Study of Language (G. Bell
& Sons).

Macdonell: Vedic Grammar for Students (Oxford University
Press).

Whitney: Sanskrit Grammar (Kegan Paul, Trench, Trubner
& Co.).

Uhlenbeck: Manual of Sanskrit Phonetics (Luzac & Co.).

Kaegi: The Rig-veda: the oldest Literature of the Indians
(Ginn & Co., Boston).

Macdonell: History of Sanskrit Literature (William Heine-
mann).

Macdonell: India's past.

Max Muller: History of Ancient Sanskrit Literature (Re-
print, Pahini Office, Allahabad.)

A. B. Keith: 'Classical Sanskrit Literature' and 'Sanskrit
Drama, its origin, theory and development.'

**IV] TEXT-BOOKS IN SANSKRIT—BRANCH VIII—FOR 553
B.A. (HONS.) DEGREE EXAMINATION, 1938.**

Books recommended for consultation—

Brugmann: Comparative Grammar of the Indo-Germanic Languages, translated by Wright, Conway and Rouse.

Bopp: Comparative Grammar of the Sanskrit, Zend, Greek, Latin, Lithuanian, Gothic, German and Slavonic languages (translated by Eastwick.)

Schleicher: Compendium, translated by Bendall.

Whitney: Life and Growth of Language.

„ : Language and its Study.

„ : Oriental and Linguistic Studies.

Max Muller: Lectures on the Science of Language.

„ : Biography of Words.

Delbruck: Introduction to the Study of Language.

Carl Abel: Linguistic Essays.

Lefevre: Race and Language.

Gray: Principles of Indo-Iranian Phonology.

Thumb: Handbuch der Sanskrit.

Wackernagel: Altindische Grammatic.

Macdonell: Vēdic Grammar.

Beams : Comparative Grammar of the Modern Aryan languages of India.

Hoernle: Comparative Grammar of the Gaurian languages.

Arnold: Vēdic Metre.

Bloomfield: The Atharva-vēda.

Rg, Yajus and Atharva-prātisākhyas.

Goldstucker: Pāṇini, his place in Sanskrit Literature.

Weber: History of Indian Literature translated by Mann and Zachariah.

Muir: Original Sanskrit Texts.

Stein: Kalhaṇa's Chronicle of Kāshmir.

Ragozin: Vēdic India.

Rhys Davids: Buddhist India.

V. A. Smith: Early History of India.

Rapson: Ancient India.

R. C. Dutt: History of Civilization in Ancient India.

C. V. Valdyā: Epic India.

„ Riddle of the Rāmāyana.

Bhandarkar: Early History of the Dekkan.

Schrader: Prehistoric Antiquities of the Aryan Peoples.

Langlois and Seignobos: Introduction to the Study of History (translated by Berry).

A. B. Keith: Religion and Philosophy of the Vedas and Upanisads—Harward Oriental Series.

Winternitz—History of Sanskrit Literature.

P. S. Deshmukh. The Origin and Development of Religion in Vedic Literature. (Oxford University Press, 1933).

SPECIAL PART.

Vyākaraṇa and Alankāra.

Bhattoji Dīkṣita: Prauḍhamanōramā-Samjñā, Paribhāṣā, Sandhi, Strīpratyaya and Kāraka-prakaraṇas (Benares Edition).

Patañjali: Mahābhāṣya, I, 1, āhnikas i to iii (Nirnaya Sagara Press, Bombay).

Bhartṛhari: Vākyapadīya, Kāṇḍa I (Benares Edition).

Ānandavardhana: Dhvanyālōka (Nirnaya Sagara Press, Bombay).

Rasa-gaṅgādhara by Jagannātha Paṇḍita: First Ānana only (Nirnaya Sagara Press, Bombay).

Books recommended for study—

Goldstucker: Pāṇini, his place in Sanskrit Literature.

Belvalkar: Systems of Sanskrit Grammar.

Aristotle: Poetics.

Bain: English Composition and Rhetoric.

Vaughan: Literary Criticism.

Winchester: Principles of Literary Criticism.

Gayley and Scott: Methods and Materials of Criticism.

S. K. De: History of Sanskrit Poetics.

Books recommended for consultation—

Mammaṭa: Kāvyaaprākāśa.

Dhanañjaya: Daśarūpaka.

Courthope: Life in Poetry and Law in taste.

Saintsbury: History of Literary Criticism.

N.B.—Students are informed that all the Oriental books in the above lists can be procured through the Oriental Books Supplying Agency, 15, Shukrawarpet, Poona, or through the Proprietor, The Punjab Sanskrit Book Depot, Said Mitha Bazaar, Lahore.

Branch IX.

ARABIC LANGUAGE AND LITERATURE, 1938.

General Part.—

1. Tafsir-i-Bayzawi—1st Surah only.
2. Jamharatu-Ash'a'ril Arab by Ibn Durayd.
3. Al Hamasa by Abu Tammam—First three chapters.
4. Diwan of Al Mutanabbi—1st Part ('Ukbārī's commentary).
5. Maqamat of Al Hariri.
6. Maqamat of Badi'uzzaman-al-Hamadani.
7. Sahihul Bukhari—1st Five Ajza.
8. Tarikhu—Adabil—Lughatil—'Arabiyyah by Jurji Zaydan, 1st 2 Volumes.

Grammar, Prosody, and Poetics.—

1. Asrarul Balaghat } by Abdul Qadir Jurjani.
2. Dalailul 'Ijaz }
3. Wright's Arabic Grammar, Vols. 1 and 2.
4. Wright's comparative grammar of Semetic Languages.
5. Al Muffasal by Al-Zamakhshari.

History of Literature.—

1. Nicholson's Literary History of the Arabs.
2. Tarikhu Adabil Lughatil Arabiyyah by Zaydan.
3. Fil Adabil Jahili by Taha Husain.

**556 TEXT-BOOKS IN ENGLISH—BRANCH VII—FOR [APP.
B.A. (HONS.) DEGREE EXAMINATION, 1939.**

Special Part.—

1. Prolegomena of Ibn-Khaldun.
2. As-shifa by Qazi 'Iyaz.
3. Muhazaratul-Umamil Islamiyyah by Alkhizari.
4. 'Asarul-Mamun.
5. Tarikhut—Tamaddunil Islami by Zaydan.

The attention of the student is invited to the following books though it must be distinctly understood that they are not prescribed as text-books:—

I. Books recommended for study with reference to the General Part:—

1. The Kamil of Al Mubarrad (Edited by Wright).
2. Khamsatu Dawawinil Arab.
3. Diwans of Abu Nuwas and Abul Ala.
4. Kitabul Amali by Abu Ali-al-Qali.
5. Oriental and Linguistic studies (Whitney).
6. Traditions of Islam by Guillumme.
7. Muslim Jurisprudence and Theology by Macdonald.
8. Islamic culture, Edited by Picthal, first 5 volumes.

II. Books recommended for study with reference to the Special Part:—

1. Yaqut's Dictionary of Learned men.
2. The spirit of Islam (Amir Ali).
3. History of the Saracens (Amir Ali).
4. Rise, Decline and fall of the Caliphate (Muir).
5. The legacy of Islam by Arnold.
6. Murujuz Zahab by Al-Mas'udi.
7. Nafhut Tib by Al Muqqari, first 2 volumes.

B.A. (Hons.) Degree Examination (Final), 1939.

Branch VII.

ENGLISH LANGUAGE AND LITERATURE, 1939.

The same texts as for 1938 (*vide* p. 545), with the following changes:—

Middle English—

Chaucer—The Prologue; Troilus and Criseyde, R. C. Goffin (O.U.P.)

Modern Literature II—

Omit *Rivals*—Add *School for Scandal*, for Non-detailed study.

Modern Literature III—

Omit *Saul** Omit *In Memorium*.

Remove asterisk from *Merope*.*

Add Shelley—Selections in Peacock.

Tennyson—Selections in Peacock.

Swinburne—*Atalanta*.

Special Period—

Age of Pope and Johnson.

Omit *School for Scandal*. Add *The Rivals*, *The Critic**

Age of Wordsworth—

The *Prelude*. For detailed study Books 1, 2, and 4.

Endymion—Books I* and III.*

• Omit *Adonais*.

Branch VIII.

SANSKRIT LANGUAGE AND LITERATURE, 1939.

General Part.

The same as for 1938 (*Vide* p. 551).

Special Part.

The same as for 1938 (*Vide* p. 554).

Branch IX.

ARABIC LANGUAGE AND LITERATURE, 1939.

Literature—(General Part).—

For Study.—

Tafsir-e-Kabir—Imam Raza (First Surah only).

Jamharatu-Ash'a'ril Arab—Ibn Durayd.

Diwan-e-Abe Tamam.

Diwan-e-Ibnul Mutazz.

Maqamat of Al Hariri.

Maqamat of Al Hamdani.

Sahihul Bukhari—1st Five Ajza.

Fajrul Islam Part I—Ahmad Amin.

Zuha-Al Islam, Vols. I and II—Ahmad Amin.

Grammar, Prosody and Poetics.—

For Study.—

Asrarul Balaghat—Jurjani.

Al Balaghatul Waziha.

Wright's Arabic Grammar, Vols. I and II.

Wright's Comparative Grammar of Semitic Languages.

Almufassal—Azzamakhshiri.

History of Literature.—

Nicholson's Literary History of the Arabs.

Tarikhu-A'dabil-Lughatil Arabiyya—Zaidan.

Fil-Adabil Jahili—Dr. Taha Hussain.

(Special Part.)

For Study.—

Kitabut-Taj—Jahiz.

Seerat-u-Ibn Hisham.

Muhazaratu Tarikhil Umamil Islamia, Vols. I and II—
Al Khizari.

Asrul-mamun—3 Vol.—Ahmad Farid Rifayi.

Tarikh-ut-Tamaddunil Islami—Zaidan.

*Books recommended for Study with reference to the General
Part.—*

The Kamil of Al Mubarrad (Edited by Wright).

Kham Satu Davawinul Arab.

Diwans of Abu Nawas and Abul Ala.

Kitab-ul Amali—Abu Ali l-Qali.

Oriental and Linguistic Studies (Whitney).

Traditions of Islam—Guillumme.

Muslim Jurisprudence and Theology—Macdonald.

Islamic Culture, edited by Picthal, first 5 Vols.

Books recommended for Study with reference to the Special Part.—

Yaqut's Dictionary of Learned Men.

The Spirit of Islam—Amir Ali.

History of the Saracens—Amir Ali.

Rise, Decline and Fall of the Caliphate—Muir.

The Legacy of Islam by Arnold.

Murujuz Zahab—Al Mas'udi.

Ghabir-ul Undulus-o-Haziruha.

Nafhut Tib—Al Maqqarri—(First 2 Vols).

B.A. (Hons.) Degree Examination (Final), 1940.

Branch VII.

ENGLISH LANGUAGE AND LITERATURE, 1940.

The same as for 1939 (*Vide* p. 556).

Branch VIII.

SANSKRIT LANGUAGE AND LITERATURE, 1940.

General Part.

The same as for 1939 (*Vide* p. 557).

Special Part.

Vēdānta and Mīmāṃsā.

1. Dharmarājādharin; Advaita-paribhāṣā (Venkateswar Steam Press, Bombay).
2. Rāmānuja: Vēdārthasamgraha (Lazarus & Co., Benares).
3. Madhvācārya : Daṣaprakaraṇas, omitting Karmanirṇaya and Viṣṇutattva-ṇirṇaya. (The Prakaraṇas of Madhvācārya are included in the Sarvamula texts published by the Madhva Vilas Book depot, Kumbakonam. The Sarvamula Volumes (including the Daṣaprakaraṇas) can be had from the Manager (T. K. Venkobacarya), Madhva Vilas Book Depot, Kumbakonam, or from the Proprietor, the Punjab Sanskrit Book Depot, Lahore).

560 TEXT-BOOKS IN SANSKRIT FOR BRANCH VIII— [APP.
B.A. (HONS.) DEGREE EXAMINATION, 1940.

4. Saṅkarācārya : Brahma-sūtra-bhāṣya, Catuṣsūtrī only
(Nirnaya Sagara Press, Bombay).
5. Apōdēva: Mīmāṃsā-nyāya-prakāśa (Chowkhām̐ba Book
Depot, Benares).

Books recommended for study—

- F. Max Muller: The Six Systems of Indian Philosophy
(Longmans, Green & Co.).
- P. Deussen: The Philosophy of the Upaniṣads, translated
by Rev. A. F. Geden (T. Clark & Co.).
- P. Deussen: Outline of the Vēdānta System, translated by
C. Johnston (Luzac & Co.).
- K. L. Sircar: The Mimamsa Rules of Interpretation (Tagore
Law Lectures, Thacker, Spink & Co., Calcutta).
- A. B. Keith: Karma-Mīmāṃsā.
- Ramakṛṣṇadikṣita's Commentary on the Advaitaparibhāṣā
(Venkateswar Steam Press, Bombay).

Books recommended for consultation—

- Sri Harṣa: Khaṇḍana-Khaṇḍa-Khāḍya.
- Madhavacārya: Sarvadarśana-Samgraha.
- Śābara-bhāṣya with Kumārila's Vārtika.
- Vācaspati Miśra: Bhāmatī.
- Advaitānandasarasvatī: Brahmavidyābharṇa.
- Appayyadikṣita: Nyāya-rakṣāmaṇi.
- Madhavācārya: Jaimīniyā-Nyāya-Mālāvistara.
- The Tīkās on Mādhvācārya's Daṣaparakaraṇas.
- Pārthasārathi Miśra: Śāstra-dīpikā.
- Vēdānta Dēśika: Nyāya-parīśuddhi.
- G. Thibaut: The Vēdānta-Sūtras, with commentary by
Śaṅkarācārya: Introduction.
- W. James: Pragmatism.
- F. H. Bradley: Appearance and Reality.

J. Royce: The World and the Individual, First Series, Lecture IV.

F. Flint: Theism and Antitheistic Theories.

H. Lotze: Microcosmus, Book IX, Chap. IV, translated by G. Hamilton and G. G. C. Jones.

L. T. Hebbhouse: Theory of Knowledge.

A. K. Roger: A brief Introduction to Modern Philosophy.

N.B.—Students are informed that all the Oriental books in the above lists can be procured through the Oriental Books Supplying Agency, 15, Shukrawarpet, Poona, or through the Proprietor, The Punjab Sanskrit Book Depot, Said Mitha Bazaar, Lahore.

Branch IX.

ARABIC LANGUAGE AND LITERATURE, 1940.

Will be prescribed later.

Branch XI

A DRAVIDIAN LANGUAGE OR URDU AND ITS
LITERATURE, 1938.

TAMIL.

1938.

History of Language and Philology.—

For Study.—

Caldwell: A Comparative Grammar of the Dravidian Languages.

Dravidic Studies, Nos. 1—4.—Madras University Publications—(The Superintendent, Government Press, Mount Road, Madras).

Grierson: Linguistic Survey, Volume IV, Dravidian Languages.

Chatterji, S. K.: The Origin and Development of the Bengali Language, Volume I, Introduction, Sections 1—40 and Appendix B.

Gune: Introduction to Comparative Philology.

Vendryes: Language, A Linguistic Introduction to History.

For Consultation.—

Jespersen: Language, Its Origin, Theory and Development.

Sweet: The History of Language (Temple Primer).

Bloomfield: Introduction to Study of Language. (G. Bell & Sons).

Slater: Dravidian Elements in Indian Culture.

Bagchi, P. C.: Pre-Aryan and Pre-Dravidian in India.

History of Literature and Literary Criticism.—

For Study.—

K. S. Srinivasa Pillai: Tamil Varalaru, Parts I and II.

Mahamahopadhyaya V. Swaminatha Ayyar: Tamil Sangam Age.

K. Subrahmanya Pillai: Tamil Ilakkiya Varalaru.

For Consultation.—

A. Kumaraswami Pillai: Tamil Pulavar Carittiram.

G. Duraiswami Pillai: Tamil Ilakkiyam, Sanga Kalam.

M. S. Purnalingam Pillai: History of Tamil Literature.

M. Srinivasa Ayyangar: Tamil Studies.

Worsfold: Principles of Criticism.

Gayley & Scott: Methods and Materials of Criticism.

Hudson: Introduction to the Study of Literature.

Literature—General.—

Poetry.—

Pattuppattu—Malaipadukadam.

Purananuru—Stanzas 1—100.

Kalittokai—Palaikkali.

Tirukkural—Chapters 1—24.

Kambaramayanam—Ayodhyakandam.

Periyapuranam—Tirunavukkarasunayanar Puranam.

Takkayagapparani—pages 1—100.

Kalambaka Uruppukal in Tiruvarangakkalambakam, Tiruvarunaikkalambakam and Tirukkalambakam.

Prose.—

Alwarkal Kalanilai, Part I, by M. Raghava Ayyangar, Tamil Lexicon Office, Madras.

Setu Nadu and Tamil by R. Raghava Ayyangar. (Madura Tamil Sangam).

Udayanan Carittiraccurukkam by Mahamahopadhyaya Dr. V. Swaminatha Ayyar, Triplicane, Madras.

Kambanadar by T. Chelvakesavaraya Mudaliyar. (T. P. Alagan, Perambur, Madras).

Kapilar by N. M. Venkataswami Nattar, Annamalai University, Chidambaram.

Literature—Special.—

Cilappadikaram.

Manimekalai.

Grammar, Prosody and Poetics.—

Nannul—Sankaranamacchivayar Ural.

Nambi Akapporul (Madura Tamil Sangam).

Tolkappiyam Pura ThinaI Iyal, with Ilampuranam.

Yapparunkalakkarikai.

Dandiyalankaram, Porulani Iyal, with Old Commentary.

Ilakkanavilakkam, Pattiyal.

South Indian History.—

The Syllabus as for B.A. Group (v)—Chapters I—XXV of the Syllabus (*vide* pages 437—441).

Inscriptions.—

Selections of Inscriptions published by the University from time to time, (*vide* pages 575—587).

TELUGU, 1938.

General Part:—

Poetry.—

1. Bharatamu (Nannaya) Sabhaparvamu, Canto I.
2. Bharatamu (Tikkana) Virataparvamu, Canto II.
3. Panditaradhya Charitramu by Palkurki Somanaradhya, Cantos I & II.
4. Harischandra Nalopakhyanamu, Canto IV.
5. Amuktamalyada, Canto VI.
6. Prabhavati Pradyumnam by Pingali Surana.
7. Yayaticharitramu by Teleganarya.
8. Soundaranandamu by P. Lakshmikantam, University College of Arts, Waltair.
9. Mahendravidyalayamu by Devulapalli Subbaraya Sastri, Pithapuram.

Drama.—

1. Veni Samharamu by Vaddadi Subbarayudu Garu, Rajahmundry.
2. Janaki Parinayamu by Palepu Gopalam Garu, Retired Pleader, Amalapuram.
3. Hamsavijayamu by K. Kanakamma Garu, Queen Mary's College, Madras.
4. Svapnasivapalita by R. V. R. Somayajulu Garu, No. 594, Sultan Bazar, Hyderabad, (Dn.).

Prose.—

1. Harshacharita by Medepally Venkata Ramanacharyulu Garu, Dasannapeta, Vizianagram.
2. Lakshmanaraya Vyasavali by K. V. Lakshmana Rao Garu, Vignana Chendrika Series Office, Bezwada.
3. Kavivatatva Vicharamu by C. Ramalinga Reddi Garu, (Andhra University Publication).

Grammar Prosody and Poetics:—

1. Balavyakaranam.
2. Praudhavyakaranam.
3. Appakaviyam, Canto III.
4. Kavyalankara Chudamani by Vinnakota Peddana,

5. Dasarupakam by M. Suryanarayana Sastri Garu, Telugu Pandit, College of Arts, Waltair.
6. Sahitya Darpanam by V. Venkataraya Sastri, Mallikeswarar St., G.T., Madras.
7. Kavyatma by E. Raghava Ayyangar, Teacher, Hindu High School, Bezwada.

Special Part.—

*The Age of Sreenadha. (The name of a period in Telugu Literature—about A.D. 1350—1500).

History of Language and Philology:—

For Study.—

1. Vendryes: Language, a Linguistic Introduction to History.
2. Caldwell: Comparative Grammar of the Dravidian Languages.
3. Chatterjee, S. K.: Introduction (1-140 pages) in the Origin and Development of the Bengali Language.
4. Dravidic Studies 1-4, (Madras University Publication.)
5. Dravidian Philology by Dr. C. Narayana Rao, C. D. College, Anantapur.
6. Studies in Dravidian Philology by K. Ramakrishnaiya (Madras University Publication).
7. Dravida Bhashalu by G. J. Somayaji, College of Arts, Waltair.

For consultation.—

1. Jespersen: The Language, its origin, theory and development.
2. Sweet: The History of Language (Temple Primer Series).
3. Bloomfield: Introduction to the Study of Language.
4. Sesha Ayyangar: Dravidian India, Vol. I.
5. Bagchi, P. C.: Pre-Aryan and Pre-Dravidian in India.

History of Literature and Literary Criticism:—

For Study.—

1. Veeresalingam: Lives of the Telugu Poets.
2. Andhra Vangmayacharitra Sangrahamu (Published by Vavilla & Sons, Madras).

*Candidates are expected to study and acquaint themselves with the literary tendencies and general literature of the period with the help of the books on The History of Telugu Literature available.

3. Andhra Kavitra Charitramu by A. Bapiraju (Vavilla & Sons, Madras).
4. History of Telugu Literature (Heritage of India Series). Christian Literature Society Publication.
5. History of Telugu Poetry by B. Narayanamurti, Pandit, M. R. College, Vizianagram.
6. Sahitya Tatva Vimarsanam by J. Satyanarayana, Andhra Patrika Office, Madras.

For consultation.—

1. Hudson: Introduction to the Study of English Literature.
2. Lazarus and Crombie: Literary Criticism.
3. Worsfold: Principles of Criticism.

South Indian History and Inscriptions:—

South Indian History.—

The syllabus as for B.A. Group (v)—Chapters I—XXV of the Syllabus (*vide* pages 437—441).

Inscriptions.—

Selections of Inscriptions published by the University from time to time, (*vide* pages 575—587).

KANNADA, 1938 to 1941.

A. History of Language and Philology.

1. History of Kannada Language, Readership Lectures by Mahamahopadhyaya R. Narasimhacharya (Mysore University Publication).
2. Comparative Grammar of the Dravidian Languages by Dr. Caldwell.
3. The History of Language by H. Sweet (The Temple Primer Series).

B. Text-books (General).

1. Bharata by Pampa, Chapters 1 and 2 (Kannada Academy, Bangalore).
2. Gada Yuddha by Ranna.
3. Sri Rama Pattabhiseka by Mahalakshmi.
4. Mitravinda Govinda Nataka by Singararya.
5. Uttara Rama Charitra Natakada Kathe.

Karnataka Kavya
Kalanidhi Office,
Mysore.

6. Dharmamrita by Nayasena, Chaps. 1 and 2 (Govt. Oriental Library, Mysore).
7. Sakuntala Nataka by Basavappa Sastri.
8. Madriya Chiti by Sankara Bhatta.
9. Gokhale by D. V. Gundappa.

} Bala Sahitya
Mandala,
Mangalore.

C. Text-books (Special).

1. Ramachandra Charita Purana by Nagachandra (Kannada Academy, Bangalore).
2. Mallinatha Purana by Nagachandra (Kavya Kalanidhi Office, Mysore).
3. Abhinava Pampa * (Secretary, Karnataka Sangha, Karnatak College, Dharwar).

D. Grammar, Prosody and Poetics.

1. Sabdamani Darpana by Kesiraja.
2. Chhandombudhi by Nagavarma.
3. Rasa Ratnakara by Salva (Madras University Publication).
4. Kavi Samaya by Ramanujlengar (Kavya Kalanidhi Office, Mysore).
5. Kannada Kaipidi, Vol. I (Mysore University Publication).

} Basel Mission Book
Depot, Mangalore.

E. History of Literature and Literary Criticism.

1. Karnataka Kavi Charite by R. Narasimhacharya, Parts 1, 2 & 3. (Author, Malleswaram, Bangalore).
2. Kelavu Kannada Kavigala Kala Vichara by Venkatasubbiah, (Secretary, Karnataka Sangha, Central College, Bangalore).
3. Muddana (Secretary, Karnataka Sangha, Central College, Bangalore).

F. South Indian History and Inscriptions.

South Indian History.—

The syllabus as for B.A. Group (v)—Chapters I—XXV of the syllabus (*vide* pages 437—441).

Inscriptions.—

The Selections of Inscriptions published by the University from time to time. (*Vide* pages 575—587).

MALAYALAM.

1938.

I.—HISTORY OF LANGUAGE AND PHILOLOGY.

For Study—

1. Vendryes: Language, a Linguistic Introduction to History.
2. Gune: Introduction to Comparative Philology.
3. Caldwell: A Comparative Grammar of the Dravidian Languages.
4. Chatterji, S. K.: Introduction (Section 1—140 pages)—in the 'Origin and Development of the Bengali Language,' Vol. I, and the Appendix B.
5. Dravidic Studies, Nos. 1—4; Madras University Publications (The Superintendent, Government Press, Mount Road, Madras).
6. Grierson: Linguistic Survey, Vol. IV.
7. L. V. Ramaswami Ayyar: Grammar in Leelatilakam (College, Ernakulam).

For Consultation—

1. Jespersen: The Language, its origin, theory and development.
2. Sweet: The History of Language (Temple Primer).
3. Bloomfield: Introduction to the Study of Language (G. Bell & Sons).
4. T. R. Sessa Iyengar: Dravidian India, Vol. I.
5. Bachi, P. C.: Pre-Aryan and Pre-Dravidian in India.
6. Moonnu Cheppetukal by T. K. Joseph, B.A., L.T., Trivandrum.
7. Huzur Office Plates of Kokkarunan dadakkar—Travancore Archæological Series, Vol. I.
8. Specimen of Vatteluthu Inscriptions—Travancore Archæological Series, Vol. I.
9. Huzur Plates—Travancore Archæological Series, Vol. II.

II. HISTORY OF LITERATURE AND LITERARY CRITICISM.

For Study—

1. Govinda Pillai: History of Malayalam Literature, Vols. I and II.
2. R. Narayana Panikkar: Kerala Bhasha Sahitya Charitram, Vols. I and II.

3. Attur Krishna Pisharoti: *Sahitya Charitam*, Vol. I.
4. Ulloor S. Parameswara Ayyar: *Vignanadeepika*, Vol. I.
5. P. M. Sankaran Nambiar: *Sahityalokanam* (The Maharaja's College, Ernakulam).

For Consultation—

1. Hudson: *Introduction to the Study of English Literature*.
2. Lazarus and Crombie: *Literary Criticism*.
3. Worsfold: *Principles of Criticism*.
4. Pracheena Keralam by M. R. Balakrishna Warriar, M.A., College of Science, Trivandrum.
5. History of Kerala, Vols. I, II, and III by K. P. Padmanabha Menon, B.A., B.L., (from M. Narayana Menon, B.A., B.L., Vakil, Ernakulam).
6. History of Cochin, Vols. I and II by K. P. Padmanabha Menon, B.A., B.L., (from M. Narayana Menon, B.A., B.L., Vakil, Ernakulam).
7. Bhasha Lipikal, by Dr. L. A. Ravi Varma (Malayalam Improvement Committee, Trichur).

III.—LITERATURE—GENEAL.

1. Ramacaritam, 1 to 24 Patalams, edited by Ulloor S. Parameswara Ayyar, M.A., B.L. (R. P. Pillai, Trivandrum).
2. Kannassa Ramayanam—Sundara Kandam (B. V. Book Depot, Trivandrum).
3. Unnuneeli Sandesam: edited by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
4. Bharatam, Sabha Parvam and Karna Parvam—by Ezuttacchan. (Any Press).
5. Girijakalyanam, Unnayi Warriar (Travancore Government Publication, Trivandrum).
6. Kirmeeravadham, Kathakali, Kottayath Thampuran—Edited by P. Krishnan Nair, Lecturer in Malayalam, University of Madras.
7. Hariniswayamvaram, Thullal, by Kunchan Nambiyar. (Any Press).

Drama—

- Manipravala Sakuntalam, by Kerala Varma, (B. V. Book Depot, Trivandrum),

Modern Poetry—

1. Pingala—by Ulloor S. Parameswara Ayyar, M.A., B.L.,
Trivandrum.
2. Magadalana Mariam—by Vallathole, Mulakunnattukavu,
Cochin State.
3. Karuna by Kumaran Asan, (Mrs. N. K. Asan, Sarada Book
Depot, Thonnakkal, Trivandrum).
4. Kesaveeyam, (first three sargams) S. R. V. Press, Quilon.

Prose—

1. Bhagavatam, Gadyam, Parts I and II—(Travancore
Government Publication, Government Press, Trivan-
drum).
2. Bhutharayar, by Appan Thampuran, Ayyanthole Palace,
Trichur.
3. Chilappadikaram, published by Malayalam Improvement
Committee, Trichur.
4. Thunchath Ezuttacchan, by P. K. Narayana Pillai, B.A., B.L.,
(S. R. V. Press, Quilon).

IV.—LITERATURE—SPECIAL PERIOD.

1. Kṛṣṇagātha—From Rukminiswayamvaram to the end.
2. Aromal Chevakar—A Ballad from Vadakkan Pattukal
(published by S. R. V. Press, Quilon, or S. T. Reddiar
& Sons, Quilon, or A. R. P. Press, Kunnamkulam).
3. Samudayikaganakala—by K. P. Karuppan, Ernakulam,
Cochin State.
4. Bhasha Ramayana Champu, (Sundarakandam and Yuddha
Kandam), (Travancore Government Publication,
Government Press, Trivandrum).

V.—GRAMMAR, PROSODY AND POETICS.

1. Leelatilakam, edited by Attur Krishna Pisharoti.
2. Kerala Paniniyam, by A. R. Raja Raja Varma, M.A.
3. Vrittamanjari, Do.
4. Bhashabhushanam, Do.
5. Dravida Vrittangal and their different phases, by Appan
Thampuran.
6. Bhaṣha Darpanam, Vol. I, by Attur Krishna Pisharoti.
7. Nāṭaka Pravesika, by A. D. Harisarma.

For Consultation—

1. Prayogadeepika, by P. K. Narayana Pillai, B.A., B.L.
2. Mani Deepika, by A. R. Raja Raja Varma, M.A.

VI.—SOUTH INDIAN HISTORY AND INSCRIPTIONS.

South Indian History.

The Syllabus as for B.A. Group (v)—Chapters I—XXV of the Syllabus (*vide* pages 437—441).

Inscriptions.

Selections of Inscriptions published by the University from time to time. (*Vide* pages 575—587).

Branch XI.

A DRAVIDIAN LANGUAGE OR URDU AND ITS
LITERATURE, 1939.

TAMIL, 1939.

The same as for 1938.

KANNADA, 1939.

The same as for 1938.

MALAYALAM, 1939.

I. *History of Language and Literature.*—

The same as for 1938 with the following addition:

8. The relation between the Aryan and Dravidian Languages by Dr. L. A. Ravi Varma, M.B., B.S., (Malayalam Improvement Committee, Trichur).

II. *History of Language and Criticism.*—

The same as for 1938 with the following addition:

6. Sahityadarpanam, Part I (Cochin Improvement Committee, Trichur).

III. *Literature (General).*—

The same as for 1938 with the following additions:

Drama.—2. Meevadinde Patanam by Adiyat Krishna Menon, Trichur.

Modern Poetry.—5. Chitrayogam, First 4 Sargams, by Vallathole, Mulakunnathukavu, Cochin State.

IV. Literature (Special Period).—

The same as for 1938 with the following addition:

4. Bhasha Ramayana Champu — Ayodhya Kandam,
Sundara Kandam and Yuddha Kandam.

V. Grammar, Prosody and Poetics.—

The same as for 1938.

VI. South Indian History and Inscriptions.—

The same as for 1938.

URDU, 1939.

History of Language and Philology.—

For Study.—

Introduction to A'be Hyath—Azad.

Urdu-e-Qadeem—Shamsullah Qadiri.

Hindustani Lisaniyath—Dr. Zore.

Introduction to Comparative Philology—Gune.

For consultation.—

Jespersen: Language, its Origin, Theory and Development.

Sweet: The History of Language (Temple Primer).

Bloomfield: Introduction to the Study of Language
(G. Bell & Sons).

History of Literature and Literary Criticism.—

For Study.—

Khutbath-e-Garson De-Tasi—Ras Maswood and Dr. Yusuf Hussain.

Tarikh-e-Adabe Urdu—Askari.

Deccan men Urdu—Hashimi.

Tarikh-e-Nathr-e-Urdu—Ahsan Marharvi.

Mazamin-e-Sharar—Vol. IV.

Mazamin-e-Chakbast.

Tanqueedath-e-Abdul Huq.

For consultation.—

Hamari Shayiri—Razvi.

Marhoom Delhi College—Abdul Huq.

Principles of Literary Criticism—Abbercrombie.

Methods and materials of Criticism—Gayley and Scott.

Literature:—General.

For Study.—

Prose.—

- Sab Ras—Moulana Wajhi.
Bagh-o-Bahar—Mir Aman.
Fasana-e-Ajayib—Rajab Ali.
Fasana-e-Azad, Vol. II—Sarshar.
Adaby—Khututh-e-Ghalib—Askari (Ghalib's letters only).
Maqalathe-Hali.

Poetry.—

- Kulliyat-e-Wali.
Intiqab-e-Sowda.
Qasayid-e-Zouq.
Diwan-e-Ghalib.
Gulzar-e-Naseem.
'Kulliyat-e-Mohsin.

Literature:—Special Part.

For Study.—

Prose:—

- Intiqab-e-Oudh Punch.
Lal Qilya Ki ek Jhalak—Firaq Dehlvi.
Khialistan—Sajjad Hyder.
Maidan-e-Amal—Prem Chand.
Mazamin-e-Farhat—Mirza Farhatullah.
Parda-e-Ghaffat—Dr. A'bid Hussain.

Poetry.—

- Kulliyat-e-Akbar.
Bal-e-Jibra-eel—Iqbal.
Southe Taghazzul—Nazm Taba Tabayi.
A'Jaz-e-Ishq—Shatir.
Naqsh-o-Nigar—Joshe.

Special and General Parts.

For consultation.—

- Tarikh-e-Qasayid—Urdu—Hafiz Jalaluddin Ahmed.
Tarikh-e-Masnaviyathe Urdu—Hafiz Jalaluddin Ahmed.

Iqbal—Ahmad Din.

Ghalib—Ghulam Rasool Mehr.

Ghalib—Dr. Abdul Latheef.

Akbar—Talib Benarasi.

Jadid Urdu Shayiri—Prof. Abdul Qadir Sarvari.

Urdu Men Drama Nigari (Jamiya Press).

Grammar, Prosody and Poetics.—

For Study.—

Qawayid-e-Urdu—Abdul Huq.

Tas-heelul Balaghat.

Urdu Grammar—Platts.

Mas Shata-e-Soqan—Safdar Mirzapuri.

Nizam-e-Urdu—A'rzo Lucknowy.

Durya-e-Lathafath—by Inshaullah Khan.

ARABIC.

For Study.—

Majani ul Adab—Vol. II.

Asba'qun Nahv—Hamiduddin Farahi.

PERSIAN.

For Study.—

Farsi-e-Jadid, Part III.

Persian Grammar—Sufi Abdul Azeez.

Branch XI.

A DRAVIDIAN LANGUAGE OR URDU AND ITS
LITERATURE, 1940.

TAMIL, 1940.

The same as for 1939.

KANNADA, 1940.

The same as for 1939.

MALAYALAM, 1940.

1. *History of Language and Philology.*

The same as for 1939 with the following addition under books for "Consultation":—

"Studies in Dravidian Philology" by K. Ramakrishnayya, M.A. (University Publication).

2. *History of Literature and Criticism.*

The same as for 1939.

3. *Literature—General.*

The same as for 1939.

4. *Literature—Special.*

The same as for 1939 with the following modification.—

"Ballads of North Malabar" Vol. I or Vadakkan Pattukkal by C. Achyuta Menon, B.A., Head of the Malayalam Department, University of Madras. (University Publication) be substituted for "Aromalchevakar".

"In No. 4. Uttarakandam be substituted for Ayodhyakandam".

5. *Grammar, Prosody and Poetics.*

The same as for 1939.

6. *South Indian History and Inscriptions.*

The same as for 1939.

Branch XI.

A DRAVIDIAN LANGUAGE OR URDU AND ITS LITERATURE, 1941.

KANNADA, 1941.

The same as for 1940.

**Inscriptions for Branch XI—B.A. (Hons.)
Degree Examination.**

The following list of Inscriptions has been provisionally recommended to be studied in relation to South Indian History for the respective Dravidian Languages for Branch XI of the B.A. (Hons.) Degree Examination. Attention should be devoted particularly to the Historical portions of the Inscriptions.

LIST OF INSCRIPTIONS.

ABBREVIATIONS.

A.S.P.P. = Āndhra Sāhitya Parishat Patrika.

E.C. = Epigraphia Carnatica.

E.I. = Epigraphia Indica.

H.A.R. = Hyderabad Archæological Report.

H.A.S. = Hyderabad Archæological Survey.

I.A. = Indian Antiquary.

J.A.H.R.S. = Journal of the Āndhra Historical Research Society.

M.E.R. = Madras Epigraphy Reports.

N.D.I. = Nellore District Inscriptions, Butterworth and V. Chetty.

P.D. = Inscriptions of the Pudukkōṭṭai State.

S.I.I. = South Indian Inscriptions.

S.P.M. = Śāsana Padya Mañjari by J. Ramayya Pantulu.

T.A.S. = Travancore Archæological Series.

V.V.C. = Velugōṭṭivāri Vamśa Charitra.

Sources = Sources of Vijayanagar History.

TAMIL AND MALAYALAM.

Pallava Inscriptions.

1. Kūram plates of Paramēśvara Varman I, S.I.I., Vol. i.
2. The Kaśakuṇḍi plates of Nandivarman Pallava Malla. S.I.I., Vol. ii, Part iii.
3. The Tiruveḷḷaṅṅai Inscription of Dantivarman. E.I., Vol. xi.
4. The Vēlūrpālayam plates of Nandivarman III. S.I.I., Vol. ii, Part v.
5. Tirukkaḷukkuṇṇam Inscription of Rājakēsarivarman. (Chōla.) E.I., Vol. iii, p. 279.

Pāṇḍyan Inscriptions.

- I. Vēlvikkūṇḍi grant of Neḍuñjaḍaiyan. E.I., Vol. xvii, pp. 298 ff.
- II. Mānūr Inscription of Mārañjaḍaiyan. E.I., Vol. xxii, Part i.
- III. The Larger Śinnamanūr plates. S.I.I., Vol. iii, Part iv.

Chōla Inscriptions.

- I. Anbil plates of Sundara Chōla. E.I., Vol. xv, pp. 58 ff.
- II. Tanjore inscriptions of Rājarāja I. S.I.I., Vol. ii, Part i, Nos. 1 and 4.
- III. Ukkal Inscriptions of Rājarāja I. S.I.I., Vol. iii, Part i, No. 4, p. 7.
- IV. Mēlpāḍi Inscription of Rājarāja I. S.I.I. Vol. iii, Part i, No. 15, p. 23.
- V. Inscriptions of Rājēndra I. S.I.I., Vol. ii, Part i, Nos. 7 and 20.
- VI. Rājādhirāja—Maṇimangalam Inscription. S.I.I., Vol. iii, Part i, No. 28, pp. 53 ff.
- VII. Rājēndra II—Maṇimangalam Inscription. S.I.I., Vol. iii, Part i, pp. 59 ff.
- VIII. Maṇimangalam Inscription of Virarājēndra. S.I.I., Vol. iii, Part i, pp. 65 ff.
- IX. Kanyākumāri Inscription of Virarājēndra. E.I., Vol. xviii, No. 4.
- X. Jambukēśvaram Inscription of Kulōttuṅga Chōla I. S.I.I., Vol. iii, Part ii, No. 76, pp. 168 ff.
- XI. Vikramachōla Inscription from Tirumalavāḍi. S.I.I., Vol. iii, No. 79, pp. 182 ff.
- XII. Two Inscriptions of Kulōttuṅga II. S.I.I., vii, Nos. 150; 407.
- XIII. One Inscription of Rājarāja II. S.I.I., vii, No. 458.
- XIV. Two Inscriptions of Rājādhirāja II. S.I.I., vi, No. 438; vii, No. 890.
- XV. Two Inscriptions of Kulōttuṅga III. S.I.I., Vol. iii, Part ii, No. 88, p. 217, P.D. Nos. 163 and 166.
- XVI. Two Inscriptions of Rājarāja III. S.I.I., iv, 424; E.I., vii, p. 167.
- XVII. One Inscription of Rājēndra III. S.I.I., iv, 511.

Chêra Inscriptions.

Inscriptions of Bhāskara Ravi Varman. T.A.S., ii.

Inscriptions of Sthāpu Ravi—T.A.S. ii.

The Huzūr Office plates. T.A.S., Vol. ii, pp. 131 ff.
lines 1-54.

Kollam 149—Māmbaḷḷi plate of Śrīvallabhaṅgōdai. T.A.S.,
Vol. iv, Part i.

Kollam 302—Chōḷapuram Inscription of Vira Kēraḷavarman.
T.A.S., Vol. iv, Part i.

Kollam 364—Kollūr Maḍam plates of Vira Udaiya Mārttāṇḍa-
varman. T.A.S., Vol. iv, Part i.

Kollam 390—Kaḍinaṅguḷam Inscription of Rāman Kēraḷa-
varman. T.A.S., Vol. iv, Part i.

Kollam 395—Tirunayinārkuṛichchi Inscription. T.A.S.,
Vol. iv, Part i.

Kollam 426—Āṟṟūr plates of Vira Ravi Udaiyāmārttāṇḍa-
varman. T.A.S., Vol. iv, Part i.

Kollam 491—Kēraḷapuram Inscription of Vira-Udaiya-
mārttāṇḍa-varman 4th year of the reign.
T.A.S., Vol. iv, Part i.

Kollam 646—Suchīndram Inscription of Vira Rāma Rāma-
varman. T.A.S., Vol. iv, Part i.

Kollam 653—Quilon Inscription. T.A.S., Vol. iv, Part i.
p. 98.

Kollam 712—Suchīndram Inscription of Veṅṇumaṅkoṇḍa
Bhūtalavīra Pavivarman. T.A.S., Vol. iv,
Part i, p. 102.

Kollam 935-936—Kanyākumāri plate of Balarāmavarman.
T.A.S., Vol. iv, Part i.

Kēraḷapuram Inscriptions. T.A.S., Vol. v, Part ii, p. 93.

TELUGU AND KANNADA.

Telugu.

1. The Mālēpāḍu plates. About the middle of the sixth century of the Śaka era. E.I. xi, pp. 344-6.
2. An inscription of Pallava Bādi Mahārāja. Ś. 642 (?). N.D.I. (Kg. 25).
3. Peṭḷūru inscription of Duggirāja. N.D.I. (Kr. 27).
4. Addanki inscription of Pāṇḍuraṅga. Ś. 770 (?). E.I. xix, p. 275.
5. Dharmavaram inscription. Ś. 770 (?). Bhārati, Vol. v, 1928-9, pp. 618-9.
6. Yuddhamalla's Bezvāḍā inscription. Ś. 820. E.I., xv, p. 88.
7. Ammarāja Vijayāditya's Dharmavaram inscription. Bhārati, v, p. 613.
8. The Nandampūṇḍi grant of Rājarājanarēndra. 32nd year. E.I., iv, p. 303.
9. Drākshārāmam inscription of Viṣṇu Vardhana. Ś. 987. S.I.I., iv, 1007.
10. Śaktivarman's Prabhupaṛṇu inscription. A.S.P.P. ii, p. 399.
11. The Dīrghasi inscription. Ś. 997. E.I. iv, p. 45.
12. An inscription of Kulōttuṅga I. 23rd year Ś. 1015 (?). S.I.I. iv, 1239.
13. An inscription of Kulōttuṅga I. S.I.I., iv, 1281.
14. Chēbrōlu inscription of Paṇḍa. Ś. 976 (?) | Ś. 1040. S.I.I., vi, 117.
15. Indrakīla Hill inscription of the time of Sarvalōkāśraya Viṣṇu Vardhana. Ś. 1037. S.I.I. iv, 737.
16. Piṭhāpuram inscription of Vira Chōḍa. E.I. v, p. 74.
17. Niḍubrōlu inscription of Vikrama Chōḍa. Ś. 1054. S.I.I. vi, 123.

18. Nādeṇḍla inscription of Chōḍanṛipa. Ś. 1054. S.I.I. iv, 662.
19. Nādeṇḍla inscription of Manmamaṇḍa. Ś. 1061. S.I.I. iv, 672.
20. Nādeṇḍla inscription of Gaṇṭa. Ś. 1062. S.I.I. iv, 675.
21. Koṇḍena inscription of Tribhuvanamalla. Ś. 1064. S.I.I. vi, 624.
22. Nādeṇḍla inscription of Buddha. Ś. 1065. S.I.I. iv, 683.
23. Chēbrōlu inscription of Paṇḍa. Ś. 1065. S.I.I. vi, 103.
24. Drākshārāmam inscription of Velnāḍu Chōḍa Goṅka. Ś. 1072. S.I.I. iv, 1182.
25. Koṇḍena inscription of Bāṇa Chūraballi. Ś. 1073. S.I.I. vi, 640.
26. Bāpaṭla inscription of Rājarāja II. Ś. 1078. S.I.I. vi, 183.
27. Bāpaṭla inscription of Velanāṭi Goṅka. Ś. 1082. S.I.I. vi, 184.
28. Amarāvati inscription of Chāgi Pōta. Ś. 1079. S.I.I. vi, 218.
29. Amarāvati inscription of Sāmanta Kallapa Nāyaka. S. 1082. S.I.I. vi, 247.
30. Anumakoṇḍa inscription of Kākatī Rudra. Ś. 1084. I.A. xi, p. 9.
31. Amarāvati inscription of Kōṭa Kēta. Ś. 1104. S.I.I. vi, 224.
32. Piṭhāpuram grant of Mallidēva. Ś. 1117. E.I. iv, p. 87.
33. Chēbrōlu inscription of Jāyapa. Ś. 1135. E.I. vi, p. 43.
34. Bezwāḍa inscription of Kōṇakaṇḍrāḍi Bhīmarāja. Ś. 1135. S.I.I. iv, 780.

35. Koṇidena inscription of Oppilisiddhi. Ś. 1146. S.I.I. vi, 628.
36. Siṃhāchalam inscription of Anantavarman. Ś. 1162. S.I.I. vi, 651.
37. Upparapalle inscription of Rēcherla Kāṭa. Ś. 1167. H.A.S. No. 3.
38. Siṃhāchalam inscription of Gajapati Narasimha. Ś. 1172. S.I.I. vi, 1052.
39. Śrīkūrmam inscription of Kaṇṇiga Gajapati Narasimha. Ś. 1172. S.I.I. v, 1188.
40. Sārangapuram grant of Sārangadhara. Ś. 1176. N.D.I. Cp. 17.
41. Gaṅḍavaram inscription. Ś. 1176. N.D.I. i, D. 26.
42. Malkāpuram inscription of Rudrāmbā. J.A.H.R.S. iv, Parts 3 and 4.
43. Śrīkūrmam inscription of Naraharītīrtha. Ś. 1203. E.I. vi, p. 260.
44. Aluvalapāḍu grant of Tripurāridēva. Ś. 1196. N.D.I. i, D. 1.
45. Chiramana grant of Manumagaṇḍagōpāla. Ś. 1207. N.D.I. A. 25.
46. Kocherlakōṭa inscription of the time of Pratāparudra. Ś. 1232. N.D.I. i, D. 35.
47. Gaṇḍavaram inscription. N.D.I. ii, N. 15.
48. Aruḷāḷaperamāl inscription of Muppiḍi Nāyaka. Ś. 1238. E.I. vii, p. 130.
49. Tāḷlaproddutūru inscription of a Chōḍa chief. Ś. 1244. S.P.M., No. 69.
50. Narikallu inscription. Ś. 1254. S.P.M., No. 67.
51. Bitraguṇṭa inscription of -Samgama II. Ś. 1278. E.I. iii, p. 24.
52. Amarāvati inscription of Kētaya Vēma. Ś. 1283. S.I.I. vi, 226.

53. Pōrumāmiḷla inscription of Bhāskara Bhāvadūra.
Ś. 1291. E.I. xiv, p. 97.
54. Ayyanavōlu inscription of Anapōta Nāyaḍu. Ś. 1291.
V.V.C. App. No. 4.
55. Umānahēśvaram inscription of Māda. V.V.C. App. No. 10,
56. Aninābād inscription of Peda Kōmati Vēma. Ś. 1298.
S.P.M. No. 68.
57. Amarāvati inscription of Kāṭamareḍḍi Vēmāreḍḍi.
Ś. 1308. S.I.I. vi, 226, p. 115.
58. Achannacheruvu inscription. Ś. 1317. N.D.I. i, D. 13.
59. The Pañchadhārāla inscription of Upēndra Chōḍa.
Ś. 1325. S.I.I. vi, 657.
60. Phirangipuram inscription of Peda Kōmati Vēma.
Ś. 1331. E.I. xi, p. 313.
61. Mangampūḍi inscription of Dēvarāya I. Ś. 1337. N.D.I. i,
D. 46.
62. The Palivela inscription of the time of Doḍḍaya Alla.
Ś. 1338. S.I.I. v, No. 113.
63. Rajahmundry Museum plates of Annadēva Chōḍa.
Ś. 1338. J.A.H.R.S. i, pp. 173-89.
64. Vēdādri inscription of Jainādi Maluka Voḍeyalu. Ś. 1339.
S.P.M. No. 74.
65. Kaluvachēru plates of Anitalli. Ś. 1345. A.S.P.P. ii,
pp. 94-112.
66. Rāchakoṇḍa inscription of Nāgāmbikā. Ś. 1349. V.V.C.
App. No. 12.
67. Piṭhāpuram inscription of Vāsireḍḍi Pōtinēṇḍu. Ś. 1350.
S.P.M. No. 76.
68. The Koṇḍaviḍu plates of Gaṇadēva. Ś. 1377. I.A. xx,
pp. 390-3.
69. Kalegoṭṭa inscription of Virūpākshaṛāya. Ś. 1382.
N.D.I. i, A. 31.
70. Śrīsaṭṭam plates of Virūpāksha II. Ś. 1388. Sources,
p. 69.

71. Dēvulapalli plates of Immaḍi Narasimha. Ś. 1427.
E.I. vii, p. 80.
72. The Anantavaram copper plates of Pratāpārudra Gajapati. Ś. 1432. The Ugādi Sañchika of the Āndhra Patrika for 1928, pp. 167-80.
73. Palivela inscription of Kutupana Mulk. Ś. 1435.
S.I.I. v, 108.
74. Krishṇarāya's Udayagiri inscription. Ś. 1436. N.D.I.,
U. 40.
75. Krishṇarāya's Maṅgaḷagiri inscription. Ś. 1437. E.I. vi,
p. 117.
76. Krishṇarāya's Dharaṇikōṭa inscription. Ś. 1437. E.I. vii,
pp. 17-22.
77. Krishṇarāya's Bezwāḍa inscription. Ś. 1440. S.I.I. iv,
789.
78. Krishṇarāya's Koṇḍaviḍu inscription. Ś. 1442. E.I. vi,
p. 233.
79. Donakoṇḍa inscription of the time of Krishṇarāya.
Ś. 1447. N.D.I. i, D. 22.
80. Achyutarāya's Koṇḍapalli inscription. Ś. 1460. S.P.M.
No. 79.
81. Vankāyalapāḍu inscription of Cinnamāmbā. Ś. 1462.
S.P.M. No. 80.
82. Kollipara plates of Sadāśiva. Bhārati 1926.
83. Kōvilkōṇḍa inscription of Ibrāhim Qutb Shāh. Ś. 1472.
H.A.R. 1928-9, pp. 21-4.
84. Penugulūru grant of Tirumala I. Ś. 1493. E.I. xvi,
p. 241.
85. Penugoṇḍa inscription of Channappa Nāyaka. Ś. 1499.
S.I.I. vii, No. 563.
86. Penugoṇḍa inscription of Śrīranga I. Ś. 1502. S.I.I. vii,
No. 569.
87. Aminābād inscription of Amin-ul-mulk. Ś. 1514. S.P.M.
No. 83.

88. Kāzā inscription of Muhammad Qūli Pādshāh. Ś. 1515.
S.I.I. iv, No. 711.
89. Śrikūrmam inscription of Muhammad Qūli Pādshāh.
Ś. 1521. S.I.I. v, No. 1312.
90. Maṅgaḷampāḍu plates of Venkata I. Ś. 1524. N.D.I. i,
Cp. 6.
91. Siddhavaṭṭam inscription of Maṭḷi Ananta. Ś. 1527.
Sources, p. 249.
92. Shōḷingar inscription of Rāmadēvarāya. Ś. 1542.
S.I.I. v, No. 874.
93. Singaredḍipalle plates of Venkaṭapati Nāyaḍu (i).
Ś. 1573. N.D.I. i, Cp. 8.
94. Singaredḍipalle plates of Venkaṭapati Nāyaḍu (ii).
Ś. 1608. N.D.I. i, Cp. 9.
95. Śrikūrmam inscription of the 18th century. Ś. 1685.
S.I.I. v, No. 1203.

Kannada.

1. Bādāmi inscription of Maṅgaḷiśa. I.A. x, p. 59.
2. Aihole inscription of Pulakēśin II. Ś. 556. E.I. vi, p. 1.
3. Balagāmve stone inscription of Vinayāditya. I.A. xix,
p. 142.
4. Lakṣmīśvara stone inscription of Vijayāditya and
Vikramāditya II. Ś. 654 (?). I.A. x, p. 164.
5. Kāñchīpuram inscription of Vikramāditya II. E.I. iii
p. 359.
6. Lakshmiśvara stone tablet of Lōka Mahādēvi. I.A. x
p. 164.
7. Hattimattūr inscription of Kṛishṇa I. Ś. 678 (?).
E.I. vi, p. 161.
8. Śravaṇa Beḷagoḷa Epitaph of Mārasimha II. Ś. 722 (?).
E.I. v, p. 151.
9. Mantravāḍi inscription of Amōghavarsha I. Ś. 787.
E.I. vii, p. 201.

10. Niḍagunḍi inscription of the time of Amōghavarsha I. Ś. 796 (?). E.I. vii, p. 208.
11. Kappadavañja grant of Krishṇa II. Ś. 832. E.I. i, p. 52.
12. Dānavulapāḍu inscription Śrī Vijaya. Ś. 832 (?). E.I. x, p. 150.
13. Kalas plates of Gōvinda IV. Ś. 851 E.I. xiii, p. 326.
14. Kaisanūr inscription of Krishṇa III. Ś. 868. E.I. xvi, p. 280.
15. An inscription at Dēvagiri. Ś. 880 (?). E.I. xi, p. 1.
16. Kaisanūr inscription of Nityavarsha Amōghavarsha. Ś. 892. E.I. xvi, p. 284.
17. Hebbal inscription of the time of Mārasimha. Ś. 896. E.I. iv, p. 350.
18. Siral inscription of Taila II. Ś. 902. E.I. xvi, p. 1.
19. Bhairamaṭṭi inscription of the Sinḍa family. Ś. 912-13. E.I. iii, p. 230.
20. Chikmagalūr inscription of the time of Rāchamalla III. Ś. 922 (?). E.I. viii, p. 50.
21. Suḍi inscription of Vikramāditya V. Ś. 932. E.I. xv, p. 75.
22. Alūr inscription of Vikramāditya V. Ś. 933. E.I. xvi, p. 27.
23. Kutenūr inscription of Jayasimha II. Ś. 950. E.I. xv, p. 329.
24. Hoṭṭūr inscription of Satyāśraya. Ś. 959. E.I. xvi, p. 75.
25. Sudī inscription of the time of Sōmēśvara I. Ś. 973. E.I. xv, p. 77.
26. Banavāṣe inscription of Kadamba Kirtidēva. Ś. 990. E.I. xvi, p. 354.
27. Sudī inscription of Sōmēśvara II. Ś. 997. E.I. xv, p. 95.
28. Humcha inscription of Nannisantāra. Ś. 999. E.C. viii, Nr. 35.
29. Ēvūr inscription of the time of Vikramāditya VI. Ś. 999. E.I. xii, p. 271.

30. Ablūr inscription of the time of Vikramāditya VI.
Ś. 1026. E.I. v, p. 213.
31. Ēvūr inscription of the time of Vikramāditya VI.
Ś. 1027. E.I. xii, p. 329.
32. Kallūrguḍḍa stone inscription (Ganga). Ś. 1043.
E.C. vii, Sh. 4.
33. Yalagunda inscription of Viṣṇuvardhana. E.C. v, Hn. 89.
34. Huli inscription of the reign of Bijjala. Ś. 1084.
E.I. xviii, p. 208.
35. Madagiḥal inscription of Rāyamurāri Sōvidēva. Ś. 1093.
E.I. xv, p. 319-20.
36. Kurugōḍu inscription of Sinda Rāchamalla II. Ś. 1095.
E.I. xiv, p. 265.
37. Ēvūr inscription of the time of Sankamadēva. Ś. 1101.
E.I. xii, p. 336.
38. Banavara stone inscription of the time of Ballāḷa II.
Ś. 1110. E.C. v, Ak. 22.
39. Muttuge inscription of Yādava Bhīllama. Ś. 1111.
E.I. xv, p. 32.
40. Belgaum inscription of Raṭṭa Kārtavīrya. Ś. 1127.
E.I. xiii, p. 15.
41. Heragu inscription of Ballāḷa II. Ś. 1139. E.C. v,
Hn. 57.
42. Kōlūr inscription of Yādava Singhaṇa. Ś. 1142 (?).
E.I. xix, p. 194.
43. Niṭṭūr inscription of Vīra Narasimha II. Ś. 1143.
E.C. v, Hn. 106.
44. Mamdūru inscription of Kannara. Ś. 1172. E.I. xix,
p. 19.
45. Koravangala inscription of Ballāḷa II. Ś. 1173. E.C. v,
Hn. 71.
46. Hīreyūr inscription of Sōmēśvara. Ś. 1177. E.C. v,
Ak. 108.
47. Mosale inscription of Narasimha III. Ś. 1189. E.C. v,
Ak. 8.

48. Halebīḍu inscription of Narasimha III. Ś. 1192. E.C. v, Bl. 92.
49. Kaṭṭe Sōmanahaḷḷi inscription of Narasimha III. Ś. 1199. E.C. v, Bl. 165.
50. Masūru inscription of Kōṭe Sōmaya Nāyaka. Ś. 1212. E.C. viii, Nr. 33.
51. Maṭṭikoppa Virakal inscription. Ś. 1225. E.C. viii, Sa. 101.
52. Kūḍḷi temple inscription of Ballāḷa III. Ś. 1242. E.C. vii, Sh. 69.
53. Hosakōṭe inscription of Kōṭināyaka. Ś. 1242. E.C. vii, Nr. 19.
54. Āḷadahāḷḷi inscription of Ballāḷa III. Ś. 1261 (?). E.C. v, Ak. 183.
55. A Kanarese inscription of Bukka I. Ś. 1284. E.C. viii, Tl. 197.
56. Hampi inscription of the time of Dēvarāya I. Ś. 1332. S.I.I. iv, 267.
57. Tīrthahaḷḷi copper plates of Immaḍi Prauḍhadēvarāya. Ś. 1389. E.C., viii, Tl. 206.
58. Hogakere inscription of the time of Yindagarasa Voḍeyaru, Ś. 1412. E.C. viii, Sa. 163.
59. Shimoga copper plate grant of the time of Keḷadi Rāmakrishṇappa Nāyaka. Ś. 1504. E.C. vii, Sh. 2.
60. Karakaḷa inscription of Bhairava II. Ś. 1508. E.I. viii, p. 122.
61. Kūḍḷi Śṛiṅgēri Maṭha plates of Venkaṭapati Dēvarāya. Ś. 1510. E.C. vii, Sh. 83.
62. Melige inscription of the time of Venkaṭadēvarāya. Ś. 1530. E.C. viii, Tl. 166.
63. Bastihaḷḷi inscription of Krishṇappa Nāyaka. Ś. 1560. E.C., v, Bl. 128.
64. Śṛiṅgēri inscription of the time of Keḷadi Sadāśīva Nāyaka. Ś. 1574. E.C. vi, Sg. 11.
65. Malabāgalu inscription of the time of Sōmēśekhara Nāyaka. Ś. 1588. E.C. viii, Tl. 156.

Branch XII.*

ISLAMIC HISTORY AND CULTURE.

(1) ADVANCED HISTORY OF ISLAM:—

Books recommended for study.—

Amir Ali: A Short History of the Saracens.

Le Strange: Baghdad during the Abbasid Caliphate.

Osborne: Islam under the Caliphs of Baghdad.

Arnold: The Caliphate.

Muir: The Caliphate; Its Rise, Decline and Fall.

Margoliouth: Mahomed.

For consultation.—

Le Strange: The Lands of the Eastern Caliphate.

Noldke: Sketches from Eastern History.

Zaydan: Umayyads and Abbasids.

(2) ISLAMIC LAW AND CONSTITUTION:—

Books recommended for study.—

Guillaumme: The Traditions of Islam.

Macdonald: Muslim Theology, Law and Constitution.

Rahim: The Principles of Muhammadan Jurisprudence,
(Select Chapters).

M. U. Y. Jung: Administration of Justice and Muslim
Law.

Mahomed R. Yousuf: Tagore Law Lectures.

For consultation.—

Arnold: The Preaching of Islam.

Macdonald: Development of Islamic Jurisprudence
(Select Chapters).

Winsinck: The Muslim Creed.

- (3) & (4) Two SPECIAL SUBJECTS, with periods of Islamic History to be studied along with original authorities, the subjects selected being taken from the list below:—**

(a) THE MUGHALS AND THE RAJPUTS:—

Original Sources—

Elliot and Dowson: The History of India as told by
its own Historians.

Abul Fazl: Akbarnama.

Bernier: Travels in the Moghul Empire.

A. Dow: The History of Indostan.

***Note:—**The Regulations governing Branch XII—Islamic History and Culture will be given effect to from the academic year 1937-38.

Modern Works—

Rajputana Gazetteer, 3 Vols.

J. Todd: Annals and Antiquities of Rajasthan.

(b) THE BAHMINI RULERS AND THE VIJAYANAGAR KINGDOM:—

Original Sources—

Ferishta: Gulshan-i-Ibrahimi.

Khafi Khan: Muntakhab-ul-Lubab.

Abul Quasim: Hadiqat-ul-Alam.

J. S. King: The History of the Bahmini Dynasty.

W. Haig: The History of the Nizam Shahi Kings.

S. Krishnaswami Ayyangar: Inscriptions of Vijayanagar.

Modern Works.—

H. Krishna Sastri: The Dynasties of Vijayanagar.

R. Sewell: A Forgotten Empire.

S. Krishnaswami Ayyangar: South India and Her Muhammadan Invaders.

S. Krishnaswami Ayyangar: A little known chapter of Vijayanagar History.

(c) THE MUGHAL ADMINISTRATION:—

Original Sources.—

Abul Fazl: Ain-i-Akbari.

Ahmed Nizamuddin: Tabkati Akbari.

Bernier: Travels in the Moghul Empire.

Khafi Khan: Muntakhab-ul-Lubab.

Elliot & Dowson: The History of India as told by its own Historians.

Modern Works.—

J. Sarkar: Moghul Administration.

Dr. Ibn Hassan: Moghul Government.

Dr. R. P. Tripathi—Muslim Kingship: Some aspects of Muslim Administration.

(d) COMMERCE AND INDUSTRY UNDER THE MOGHULS:—

Original Sources.—

Abul Fazl: Ain-i-Akbari.

Tavernier: Travels in India.

Manucci: Storia du Mogor.

Modern Works.—

Moreland: India at the death of Akbar.

Moreland: India from Akbar to Aurangzeb.

(5) POLITICS—as for Branch III (History) Honours.

(6) ECONOMICS—as for Branch III (History) Honours.

(7) ESSAY—as for Branches III and IV.

APPENDIX V.

B.Sc. DEGREE EXAMINATION.

Syllabuses.

(i) Mathematics—Main.

The same as for B.A. (Pass) Main (i.e., i-b, omitting optional Subject) with the addition of—

Differential equations, ordinary and partial.

The standard to be as in Murray's Differential Equations, when those parts are omitted which concern only the student of Pure Mathematics.

Mathematics—Subsidiary.

The same as for B.A. Mathematics—Subsidiary (*vide* (p. 395).

(ii) Physics Main.

The course includes a more extended study of the matter included in the Intermediate course and in addition the following:—

Dynamics.—Resolution and composition of displacements, velocities and accelerations. Curves of speed and velocity diagrams. Motion of a particle in one plane under constant acceleration. Simple harmonic motion; composition of simple harmonic motions. Angular velocity and angular acceleration; moment of velocity.

Absolute units of force. Resolution and composition of forces. Angular momentum: moments of inertia in simple cases. The pendulum; determination of g . Work, energy, conservation of energy; energy diagrams. Impact; the ballistic pendulum. Simple cases of the dynamics of strings. Dimensions of dynamical units. Conditions of equilibrium of a body acted on by forces in one plane. Moments, couples. Centre of mass. The theory of simple machines. Law of friction. Graphical methods with simple applications. Smooth hinges. Virtual work.

Properties of matter.—Gravity, gravitation. Elasticity, Hooke's law. Compressibility of gases (at high and low pressure) and liquids. Compressibility and rigidity of solids; the elastic limits. Strains due to simple longitudinal pull; Young's modulus and its expression in terms of k and n . Bending in one plane of bars of simple cross-sectional area; flexural rigidity: application to girders. Simple twisting of wires of circular cross section by couple in plane at right angles to length; torsional rigidity; applications to torsion balance, and shafts.

Diffusion of liquids and gases; analogy with conduction of heat. Osmosis. Viscosity. Pressure of a gas and its explanation on the kinetic theory. Avogadro's hypothesis; Van der Waal's equation.

Hydrostatics.—Thrust of fluid on plane and curved surfaces. Centre of pressure in simple cases. Floating bodies and conditions of stability. Properties of gases; determination of heights by barometer. Pumps, pressure gauges, and hydrostatic machines. Capillary phenomena and their explanation by surface tension; general theory of surface tension.

Heat.—The methods of calorimetry and thermometry. Vapour pressures, critical temperature and pressure. Conduction and diffusion of heat and the determination of constants. Kinetic theory of gases: simple applications. Radiation and absorption; laws of cooling. Theory of exchanges; methods of measuring radiation. Laws of thermo-dynamics, simple applications.

Light.—Illumination; photometry. Achromatism in lens systems; direct vision spectroscopy.

Velocity of light. The wave theory; simple interference phenomena. Huygens' principle. Explanation of straight line propagation, reflexion and refraction of light. Action of mirrors, lenses, etc., reviewed from this standpoint. Simple diffraction phenomena. Gratings and wave length determination. Spectrum analysis; study of spectra. Doppler's principle. Double refraction and polarization of light. Rotation of plane of polarization; simple applications.

Magnetism.—Forces on a magnet in a magnetic field. Determination of the axis and moment of a magnet. Magnetic potential; level surfaces. Interaction of two short magnets; determination of field strength. Magnetic shell; its potential energy in magnetic field. Total normal induction; Gauss' theorem; number of lines of force. Magnetic induction in iron, etc. Theory of magnetism.

The magnetic field of the earth; the magnetic elements and their variations; the compass and its corrections.

Electricity.—Electric capacity; specific inductive capacity. Distribution of electricity on surface of conductors; images; value of electric force in simple cases of distribution. The mechanical force on charged conductors; energy of electrified systems. The dielectric medium; dielectric displacement currents.

Wheatstone's bridge; specific resistance; resistance thermometers. Conductivity of electrolytes; ionization; migration phenomena; accumulators, standard cells. The potentiometer system of measurement. Thermo-electricity; application of thermo-dynamics; thermo-electric diagrams. Electro-magnetic

induction; co-efficients of induction; induction coils. Energy of circuit carrying current when placed in a magnetic field; mechanical force on conductors carrying current; moving coil instruments. Lenz's law; illustration from dynamos and motors. Determination of current, resistance and E. M. F. in absolute measure. The discharge of a condenser; electric waves. The triode valve.

The elementary theory of the continuous current dynamo and motor and of the alternating current dynamo. General principles of the application of electricity to lighting, power transmission, telegraphy, etc.

Sound.—The transmission of energy through material media by wave motion; speed of propagation of waves of permanent type. Nature of musical sound; pitch, scales. Reflexion and refraction of sound; influence of wave length. The vibration of strings, bars, plates, and gas columns; resonance. Interference and diffraction phenomena. Analysis of sound. Measurement of wave length, velocity and pitch.

A practical examination will be held to test the candidate's acquaintance with the phenomena and his ability to show them, as well as his ability to make physical measurements. At the practical examination candidates must submit to the Examiner or Examiners their laboratory note-books duly certified by their professors or lecturers as a *bona fide* record of work done by the candidates.

DETAILED SYLLABUS IN DYNAMICS, STATICS AND HYDROSTATICS.

In addition to the Theorems included in the B.A. Syllabus, the following:—

A particle slides down a rough inclined plane, determine the motion.

To find the velocities after impact of—

- (1) two smooth spheres impinging directly.
- (2) two smooth spheres impinging obliquely.

To find an expression for the loss of kinetic energy when two smooth spheres impinge.

To find an expression for the tension of the string of a conical pendulum.

To find the range of a projectile on an inclined plane.

To find the moment of inertia of a sphere about a diameter.

To find the moment of inertia of a cylinder about an axis through the centre of gravity perpendicular to the geometrical axis.

To find the centre of gravity of (1) an arc of a circle (2) a tetrahedron (3) a hemispherical shell (4) a solid hemisphere.

To prove the principle of virtual work for a system of forces acting on a particle.

To find the *least* force that will move a load *up* a rough inclined plane.

To show that the graduations corresponding to specific gravities in A.P. are at distances from a certain point in the stem produced which are in H.P.

To prove the formula for measuring surface tension of a liquid by Quincke's method.

To determine the difference in altitude between two stations with the aid of barometric readings at the two places.

To find the force with which two plates cling together which are pressed together so as to form a liquid film between them.

TEXT-BOOKS.

Main.

Books for Study.—

The same as for B.A. (Main), (*vide* page 385), with the addition of the following book:—

Saha and Srivatsava: Heat for Junior Students.

Books for reference.—

The same as for B.A. (Main), (*vide* page 385), with the addition of the following books:—

1. Hart: Introduction to Advanced Heat.
2. Draper: Heat and Thermodynamics.
3. Houstoun. Treatise on Light.

Physics—Subsidiary.

The same as for B.A.—Physics—Subsidiary—(*vide* p. 396).

Mechanical Engineering and Electrical Engineering as Subsidiary to be taken with Physics as Main.

The same as for B.A.—Subsidiary—(*Vide* pages 404—408).

(iii) Chemistry—Main.

(a) *Chemistry—General and Historical.*

The Atomic Theory; Valency. Methods of determining equivalent, atomic and molecular weights. Atomic Numbers. Isotopes. Properties of gases. Transition phenomena from the gaseous to the liquid state. Properties of solutions; osmotic pressure; vapour pressure and freezing and boiling points. Velocity of reactions and the Law of Mass Action. Phase Rule. Theories of the colloidal state. Theory of electrolytic dissociation. Transport numbers. Conductivity and Electro-motive force. Thermochemistry. Relation of physical properties to chemical constitution.

(b) *Inorganic Chemistry:—*

The descriptive portion of Inorganic Chemistry will include the elements and their compounds studied from the standpoint of the Periodic Classification omitting the detailed study of rare metals and their compounds.

(c) *Organic Chemistry—*

Historical development of the science. Methods of purification and the criteria of purity of organic compounds. Analysis of organic compounds. Calculation of empirical and molecular formulæ. Constitutional formulæ. Isomerism and Polymerism.

Paraffins; halogen substitution products. Alcohols. Alkylesters of inorganic acids. Ethers. Aldehydes and ketones, and their derivatives. Fatty acids; their esters, chlorides, amides and anhydrides. Fats, oils, soaps. Olefines and acetylenes. Unsaturated alcohols, aldehydes, ketones and acids. Amines. Urea and Urethanes. Cyanogen compounds. Organo-metallic derivatives. Glycol and Glycerol and their derivatives. Dibasic acids of the Oxalic series. Hydroxy-monobasic and polybasic acids. Stereoisomerism of carbon compounds. Diketones and ketonic acids and esters. Amino-acids and polypeptides. Sugars, starches and celluloses. Poly-methylenes.

Benzene and its homologues. Chloro-, nitro-, amino-, and sulphonic derivatives of aromatic hydro-carbons. Phenols. Azoxy-, Azo-, and Hydrazo compounds.

Diazobodies and their reactions. Benzyl alcohol, Benzaldehyde, Benzoic acid and their derivatives. Acetophenone and Benzophenone and their derivatives. Polysubstitution products, e.g., di- and triphenols, poly-carboxylic acids, hydroxy-aldehydes, hydroxy-ketones, hydroxy-acids, etc.

Laws of orientation of aromatic substitution products. Diphenyl methane, Phenyl ethylene, Diphenyl ethylene and their derivatives. Triphenyl methane, phthaleins and rosanilines. Naphthalene, Anthracene and Phenanthrene and their chief derivatives.

(d) *Practical Chemistry.*—

- (1) Qualitative analysis, including analysis of mixtures of mineral substances.
- (2) Quantitative analysis, including (a) the estimation of alkalis, alkaline carbonates, and acids by neutralization (b) determinations involving the use of the permanganate, dichromate, iodine and thiosulphate processes, (c) the estimation of chlorides and cyanides by titration with silver nitrate, and also with thiocyanate, (d) gravimetric determinations of iron, calcium, copper, silver, lead, sulphuric acid, hydrochloric acid, phosphoric acid.

Candidates at Examinations will be required to be able to standardize the solutions for volumetric analysis.

- (3) The determination of molecular weights.
- (4) Preparation of at least six simple organic substances, e.g. Chloroform, Ether, Ethyl acetate, Acetic anhydride, Urea, Nitrobenzene, Aniline, Phenol, Benzoic acid (from Toluene), Iodobenzene, Salicylic acid, an azo-dye, etc.
- (5) Identification by chemical and physical tests of the following organic compounds:—

Methyl and Ethyl alcohols; acetone; chloroform; Formic, acetic, oxalic, tartaric, citric, benzoic and phthalic acids; ethyl acetate and ethyl benzoate; urea, glucose, benzene and toluene, aniline, phenol, resorcinol, pyrogallol, benzaldehyde, acetophenone, naphthalene and naphthols.

Books for Study—

The same as for B.A.—Main—(*vide* page 386).

Chemistry—Subsidiary.

The same as for B.A.—Chemistry—Subsidiary—(*vide* p. 397).

(iv) Botany—Main.

1. The main points of structure, development, life-history and taxonomic relation of the following groups in general and the genera in particular:—

Bacteria.

Cyanophyceae.

Lyngbya, Gleocapsa, Oscillaria, Anabaena, Nostoc, Rivularia.

Chlorophyceae.

Chlamydomonas, Gonium, Pandorina, Eudorina, Pleodorina, Volvox, Ulothrix, Oedogonium, Ulva, Enteromorpha, Coleochaete, Protococcus, Scenedesmus, Hydrodictyon, Cladophora, Voucheria, Caulerpa, Botrydium, Spirogyra, Mougeotia, Zygnema, Desmids, Chara, Nitella, Diatoms.

Phaeophyceae.

Ectocarpus, Fucus, Sargassum, Dictyota, Padina.

Rhodophyceae.

Batrachospermum, Liagora, Polysiphonia, Gracilaria.

Phycomycetes.

Pythium, Phytophthora, Albugo, Mucor or Rhizopus, Pilobolus.

Ascomycetes.

Sphaerotheca, Pyrenoma, Erysiphe, Peziza, Xylaria, Saccharomyces.

Basidiomycetes.

Ustilago, Puccinia, Agaricus, Polyporus, Lycoperdon, Lthyphallus.

Lichens.

Bryophytes.

Riccia, Marchantia, Thalloid and Leafy Jungermannias, Mosses,

Pteridophytes.—

Selaginella, *Lycopodium*, *Isoetes*, *Ophioglossum*, *Gleichenia*,
Pteris or *Nephrodium* or *Pleopeltis*, *Marsilia*.

Gymnosperms.

Cycas, *Pinus*.

2. The external morphology of Flowering Plants.

3. The general principles of classification and the distinguishing characteristics of the following Natural Orders as used in the Flora of British India:—

Magnoliaceae	Apocynaceae
Ranunculaceae	Asclepiadaceae
Nymphaeaceae	Boraginaceae
Cruciferae	Bignoniaceae
Capparidaceae	Convolvulaceae
Guttiferae	Solanaceae
Malvaceae	Scrophulariaceae
Sterculiaceae	Acanthaceae
Tiliaceae	Labiatae
Geraniaceae	Verbenaceae
Rutaceae	Flacoidaceae
Meliaceae	Amarantaceae
Rhamnaceae	Loranthaceae
Sapindaceae	Euphorbiaceae
Anacardiaceae	Urticaceae
Papilionaceae	Piperaceae
Caesalpiniaceae	Casuarinaceae
Mimosaceae	Orchidaceae
Rosaceae	Scitamineae
Combretaceae	Amaryllidaceae
Myrtaceae	Liliaceae
Lythraceae	Commelinaceae
Cucurbitaceae	Hydrocharitaceae
Umbelliferae	Pontederiaceae
Rubiaceae	Palmae
Compositae	Araceae
Sapotaceae	Cyperaceae
Oleaceae	Gramineae

4. Plant Physiology:—The chemical composition of the plant. Materials of plant food and their sources. The nature of soil and the importance of its constituents and the micro-organisms in the soil. Movements of water and gases. Assimilation of carbon and nitrogen. Transpiration. Translocation

of assimilated products. Metabolism. Parasitism and other special modes of nutrition. Respiration. The influence of light, heat and gravity. Growth, movements and irritability in plants. Sexual reproduction and its significance. Vegetative reproduction. The phenomena of cross and self fertilization. Variation, Heredity and Mendelism. Theories of Evolution and Origin of Species.

5. Histology:—The structure and modes of division of the cell, and the nature of its contents. The nature and mode of origin of plastids, cell-sap and other cell-contents. The physical and chemical properties of protoplasm and cell-wall. The origin, nature and development of plant tissues. Primary and secondary tissues, and their distribution in the plant body.

6. Practical Work:—Candidates are expected to be able to make preparations illustrating the form and structure of any plant of the Groups or Orders mentioned in the syllabus and to describe them with sketches sufficient for their identification; to make dissections with the simple microscope of the floral parts of Phanerogams, and to make drawings, construct floral diagrams and refer them to their Natural Orders; to describe in technical language plants belonging to any of the Orders or Groups specified in the syllabus, and to have done field work under tuition for at least five days in each year.

At the practical examination each candidate must submit his laboratory note-books and a collection of named plants collected and preserved by himself.

Botany—Subsidiary.

The same as for B.A.—Subsidiary—(*vide* p. 399).

(v) Zoology—Main.

Theory.

I. *Invertebrata*.—The leading features in the structure, the development, the affinities and the classification of the following groups:—

Protozoa — Porifera — Coelenterata — Platyhelminthes—
Nemertini—Nematoda—Acanthocephala — Chaetognatha — Roti-
fera — Brachiopoda—Annelida—Phoronidea—Polyzoa — Arthro-
poda—Mollusca and Echinodermata.

II. *Chordata*.—The structure and the development of the vertebrate systems to be treated from an evolutionary stand-point as illustrated by representative types such as Amphioxus, Shark, Teleost, Dipnoan, Newt, Frog, Lizard, Bird and Rabbit. A study of the primitive chordates as illustrated by Sea squirt and Balanoglossus will be expected.

An outline classification of the vertebrata and a general acquaintance with the vertebrate fauna of South India.

III. *Vertebrate Embryology*.—Elements of vertebrate embryology based on a study of the Chick and the Rabbit.

IV. Outlines of the theories of organic evolution and heredity. Principles of geographical distribution.

Practical.

Candidates will be required to identify and describe specimens and preparations illustrating points of zoological interest in connection with any of the groups mentioned above. They will also be required to make dissections and simple microscopic preparations of any of the following types:—

Amoeba; Paramoecium; Vorticella; Hydra; Earthworm; Leech; Prawn and Crab (external characters); Scorpion; Centipede; Cockroach; Fresh-water Mussel; Ampullaria (Pila); Sepia; Starfish; Amphioxus (preparations and sections); Shark; Frog; Calotes; Pigeon and Hare. Candidates may also be required to identify and draw slides of developing chick. (Dissection of the nerves in the Vertebrate types will not be required except in the case of the Shark, Frog and the Rabbit).

At the practical examination, the candidates must submit their laboratory note-books.

Zoology—Subsidiary.

The same as for B.A.—Subsidiary—(*vide* p. 399).

(vi) Geology—Main.

- I. Physiography.
- II. Mineralogy and Crystallography.
- III. Petrology.
- IV. Structural and Field Geology.
- V. Stratigraphy and Palæontology.

(i) *Physiography.*

An elementary course of lectures on the following:—

The earth as a planet, its general relations to the other members of the solar system, hypotheses as to the origin of the earth; form, size and density of the earth; its movements and their effects.

The Atmosphere—its composition, height, density, pressure, temperature, moisture and movements; weather, refraction, twilight, and aurora-borealis.

The Hydrosphere—its composition, extent and distribution, depth, temperature and movements.

The Lithosphere—the chief constituents of the earth's crust, the general characters and mode of occurrence of igneous and sedimentary rocks. Condition of the interior of the earth.

Agents of geological change.—The hypogene and epigene agents of geological change, manner and results of their action, especially as influencing earth-sculpture—the destruction, construction, and gradual evolution of the crust of the earth and of its surface features.

Fossils, the main conditions favourable for their formation and preservation and their value as interpreters of the past history of the earth.

Climates—their causes and distribution; glacial epochs.

Simple facts about the geographical and geological distribution of the chief types of plant and animal life. Antiquity of man. Views as to the age of the earth's crust.

(ii) *Mineralogy and Crystallography.*

Symmetry; lines, planes and axes of symmetry; laws of Crystallography; the common holohedral, hemihedral and hemimorphic crystal forms and combinations under each of the six crystal systems; thirty-two types of crystal symmetry; the more important types of twins and twinning; grouping and irregularities of crystals, parting planes, percussion figures, etched figures; zonal characters; drawing of the more important crystal forms; systems of crystal notation, use of the contact and the reflecting Goniometer.

The principal physical properties of minerals which aid in the recognition of the various mineral species.

Isomorphism, paramorphism, pseudomorphism and dimorphism.

The chief characteristics of all the more abundant minerals including both those which are of geological interest and those of commercial value, the more important metallic ores, their modes of occurrence and uses, with special reference to India.

The practical determination of the chief physical and chemical properties of the commoner ores and minerals including the use of the blowpipe.

(iii) *Pet. ology.*

The classification and distribution of rocks, and the composition, structure, texture, origin and mode of occurrence of all the more important types and their metamorphic and altered forms.

Contact and Regional Metamorphism.

The macroscopic and microscopic examination of rocks including the determination of the simpler optical characters of

the chief rock forming minerals in parallel polarized light. Preparation of diagrams or sketches to represent features observed in rock sections under the microscope. Construction and use of a simple petrological microscope. Mechanical separation of rock-constituents, determination of the nature and history of rocks by means of the microscope.

(iv) *Structural and Field Geology.*

The more important lithological and structural features of rocks, their origin or formation; structure of mineral veins. Diagrammatic sketches of the above.

Construction and interpretation of geological maps and sections. Tracing of outcrops. Simple problems in Structural Geology.

(v) *Stratigraphy and Palaeontology.*

The chief petrological and palaeontological characters of the main geological divisions and the probable physical conditions under which they were formed. Geology of India.

Fossils, their nature and preservation. The main groups of vegetable and animal life and their distribution in time.

The characters, classification and distribution of the more important types of fossils—especially Indian; identification and sketching of fossils; causes for the imperfection of the geological record; the general succession of life as revealed thereby and the general evidence furnished in support of evolution; principles of correlation; Homotaxis.

(vi) *Practical Examination.*

The knowledge of the candidate in accordance with the syllabus will be tested also by practical examination. *Viva voce* questions may be asked, some acquaintance with field work is necessary.

Geology—Subsidiary.

The same as for B.A.—Subsidiary—(vide page 401).

Physiology—Main.*

The scope of Physiology. The cell and its parts and their significance. Histology of the tissues and organs of the body. The elementary constituents of protoplasm. The physical chemistry of the cell including diffusion, osmosis, surface action, properties of crystalloids and colloids, and permeability. Enzymes and their mode of action.

*Note :—The above Syllabus comes into force from the academic year 1937-38, i.e., from the Examination of 1939.

Muscle and nerve:—Properties of Muscle—effects of loading and fatigue on contraction—iso-metric contraction—artificial methods of excitation—chemical, thermal and electrical changes during contraction. Properties of plain muscle. The nerve-impulse—changes in nerve fibres during transmission of impulses—conditions affecting the excitability of nerve—polarisation phenomena in nerve—degeneration and regeneration of nerve fibres.

Central nervous system:—Functions of nerve-cells—reflex action—structure and functions of the spinal cord, brain stem, cerebellum and cerebrum—cerebral localisation of motor and sensory areas.

Conditioned reflexes. Composition, formation and functions of the cerebro-spinal fluid. The autonomic nervous system.

Sense Organs:—The eye as an optical instrument—dioptrics of the eye—pupil reflex—mechanism of accommodation—optical defects—properties of the retina—visual sensations—colour vision and contrast—binocular vision—use of the ophthalmoscope and perimeter. Auditory sensations—central connections of the auditory nerve. Functions of the vestibule and the semi-circular canals. Sensations of taste and smell. Cutaneous sensations and their end-organs.

Production of voice.

Circulation:—Physiological anatomy of the heart—the heart-beat—its origin—properties of cardiac muscle—the cardiac cycle—electro-cardiogram—output of the heart—nutrition of the heart—regulation of the heart-beat. General features and course of the circulation of blood—blood-pressure—velocity of blood—pulse—capillary and venous blood-flow—vasomotor mechanism—influence of exercise on circulation.

Blood:—General properties of blood—origin, life-history and functions of the formed elements—haemoglobin and its chemistry—composition of plasma—coagulation—reaction of blood—volume of blood—formation, circulation and functions of lymph.

Spleen:—Its structure and functions.

Respiration:—Mechanics of respiratory movements—blood gases and their transport—exchange of gases in the lungs and the tissues—oxidation in the tissues—estimation of total respiratory exchange—composition of expired air and alveolar air—chemical and nervous regulation of respiration—external factors influencing respiration.

Nutrition:—Chemistry of the common food substances—secretion and properties of the digestive juices and bile—movements of the stomach and intestines—absorption of food. Total exchanges of the body. Metabolism of proteins, fats and carbohydrates—nitrogen balance—basal metabolism—factors influencing metabolism—heat energy of foods—dietetics—vitamins.

Body temperature and its regulation.

Excretion:—Composition and secretion of urine—micturition.

Skin and its functions.

Endocrine Organs:—Their structure and function—the mutual interaction of hormones.

Reproduction:—The formation of germ—Cells—Harmonic influences in the development of the reproductive organs—the oestrous cycle—menstruation—ovulation—fertilisation—pregnancy—parturition—lactation.

Practical Biochemistry:—Properties and reactions of carbohydrates, proteins and fats—quantitative estimation of sugars—qualitative tests on some foods, *viz.*, milk, rice, bread, eggs, meat. Properties of the digestive juices and detection of the enzymes—qualitative tests of blood and urine—quantitative estimation of total nitrogen, urea, phosphates and chlorides in urine. Gas analysis and blood-gas analysis.

Practical Histology:—Histology of tissues and organs—common methods of staining.

Candidates may be required to identify microscopic preparations of tissues and organs.

Experimental Physiology:—Acquaintance with the apparatus employed and methods adopted for the demonstration of the fundamental physiological processes. Experiments on frog's muscle-nerve preparation and heart to demonstrate properties of skeletal and cardiac muscle and nerve-fibres—contraction of plain muscle, effect of vagal stimulation of frog's heart—perfusion of isolated frog's heart. Finding the specific gravity, viscosity, and coagulation time of blood—enumeration of blood corpuscles—estimation of haemoglobin and colour index. Record of respiratory movements and vital capacity of man. Record of blood-pressure and pulse in man. The spinal frog and the dicerebrated frog.

Books for study for B.Sc. (Pass).

1. Howell: 'Text-book of Physiology (Saunders Co.).
2. Starling: Principles of Human Physiology.
3. Harris: Experimental Physiology (Churchill).
4. Schaefer: Experimental Physiology (Longmans).
5. Cannon: Laboratory Course in Physiology (Harvard Uni. Press).
6. Bremer: Text-book of Histology (Blakiston).
7. Schaefer: The Essentials of Histology (Longmans).
8. A. T. Cameron: Text-book of Biochemistry (Churchill).

**604 SYLL. IN PHYSIOLOGY—SUBSIDIARY FOR B.Sc. [APP.
DEGREE EXAMINATION.**

9. S. W. Cole: Practical Physiological Chemistry (Heffer).
10. Folin: Laboratory Manual of Biological Chemistry (Appleton).

Books for reference:—

1. C. L. Evans: Recent Advances in Physiology (Churchill).
2. Pryde: Recent Advances in Biochemistry (Churchill).
3. Samson Wright: Applied Physiology (Oxford Medical Publications).
4. Bodansky: Introduction to Physiological Chemistry (Wiley).
5. Mathews: Physiological Chemistry (Wen-Wood).
6. Wissart: Groundwork of Bio-Physics (Bell).
7. Bainbridge: The Physiology of Muscular Exercise (Longmans).
8. Bayless: Principles of General Physiology (Longmans).
9. Maximow and Bloom: Text-book of Histology.
10. Barcroft: The Respiratory function of the blood—II—Haemoglobin (Cambridge).
11. Cushny: The Secretion of Urine (Longmans).
12. Haldane, J. S.: Respiration (Yale University).
13. Cameron: Recent Advances in Endocrinology (Churchill).
14. Sobotta-Piersol—Human Histology and Microscopic Anatomy. Vols. I and II (G. E. Stechert & Co., New York).
15. Lusk: The Science of Nutrition (Saunders).
16. Cannon: The Wisdom of the Body (Norton & Co.).
17. Marshall: The Physiology of reproduction.

Physiology—Subsidiary.

The same as for B.A.—Subsidiary—*Vide* page 401.

Text-books for the Examinations of 1938.

ENGLISH, 1938.

Prose.—

Detailed Study.—

- Stevenson: Selections—Ed. S. G. Dunn (Longmans).
- Treble: Modern Literary Essays (University of London Press).

Non-detailed Study.—

Thackeray: The Newcomes.

Burke by John Morley—Men of Letters Series (Macmillan).

Tagore: Lectures & other Addresses (Macmillan).

SANSKRIT, 1938.

- (i) Kālidasa's Meghasamdeśa (whole).
- (ii) Kādambarī Samgraha by Mahamahopadhyaya R. V. Krishnamacharyar—Pūrvabhāga; from the last paragraph on page 45, to the end of the paragraph ending with the word 'Śrūyatām' on page 64—third edition, to be had of Mahāmahopādhyāya R. V. Krishnamachariyar, Munitrayamandiram, Kumbakonam.

ARABIC, PERSIAN AND URDU, 1938.

Will be prescribed later.

TAMIL, 1938.

The same as for Non-detailed Study for Part II of the B.A. Degree Examination of 1938, viz.—

1. Jagadish Chandra Bose. (The Saiva Siddhanta Works Publishing Society, 6, Coral Merchant Street, Georgetown, Madras.
2. Pattinattar-parattiya-muvar by Nilambikai Amma, St. Appar Vilas, Perumal North Car Street, Palamcottah.

KANNADA, 1938.

The same as those prescribed for Non-detailed Study for Part II of the B.A. Degree Examination of 1938, viz.—

1. Chhatrapati Sivaji by C. Vasudevayya (Author, XI Cross Road, Malleswaram, Bangalore).
2. Raghunatha Simha by M. T. Vallabha Ayyangar. (Karnataka Hithaishini office, Nanjangud).

MALAYALAM, 1938.

1. Keralēswaran by T. Raman Nambissan, B.A., L.T., (N. S. Society, Trivandrum).
2. Durgādasan by Pandit R. C. Sarma. (Vidya Vinodini Press, Trichur).

606 TEXT-BOOKS IN ENGLISH, SANSKRIT, TAMIL, [APP.
KANNADA AND MALAYALAM FOR B.Sc. DEGREE
EXAMINATION, 1939.

Text-books for the Examinations of 1939.

ENGLISH, 1939.

Prose.—

Detailed Study.—

Landor: Selections—Ed. Welby (O.U.P.)

Treble: Literary Essays (University of London Press).

Non-detailed Study.—

Disraeli: Sybil.

Galsworthy: Short Stories (Longmans).

Sarma: A Book of Indian Culture (Macmillan).

SANSKRIT, 1939.

The same as for 1938—*Vide* page 605.

ARABIC, PERSIAN AND URDU, 1939

Will be prescribed later.

TAMIL, 1939.

The same as for Non-Detailed Study for Part II of the B.A. Degree Examination of 1939, viz.—

1. Luther Burbank by K. S. Kannuswami Pillai (The Saiva Siddhanta Works Publishing Society, 6, Coral Merchant Street, Madras).
2. Velanmaik-kadan by Dr. P. J. Thomas (D. M. Udaiyar, 48-B, First Street, Pudupet, Mount Road P.O., Madras).

KANNADA, 1939.

The same as those prescribed for Non-detailed study for Part II of the B.A. Degree Examination, 1939, viz.—

1. Life of Sri Ramakrishna Parama-hansa, by K. V. Puttappa (Mysore University Publication).
2. Mayavi by M. V. Sastri (Satya Sodhana Book Depot, Fort, Bangalore).

MALAYALAM, 1939.

The same as for 1938—*Vide* page 605.

Text-books for the Examinations of 1940.

ENGLISH, 1940.

(Will be prescribed later).

SANSKRIT, 1940.

Same as for 1939 (*Vide* page 606).

ARABIC, PERSIAN AND URDU, 1940.

(Will be prescribed later).

TAMIL, 1940.

The same as for the non-detailed study for Part II of the B.A. Degree Examination, 1940, viz.:—

1. Life of Dr. Caldwell (R. P. Sethu Pillai).
2. Manikkavasagar (P. S. Acharya).

TELUGU, 1940.

1. Jagatkatha by K. Sathagopacharyulu, B.A., B.L., Vakil, Cocanada, pages 227 to 566.
2. Vishnuguptudu by G. Radhakrishna Sastry, Nellore.
3. Pramadhanam by Venkataparvatiswara Kavulu, Pithapuram.

KANNADA, 1940.

The same as those prescribed for Non-detailed study for Part II—of the B.A. Degree Examination, 1940, viz.:—

1. Durgesa Nandini by B. Venkatacharya, (The Bangalore Press Book Depot, Krishna Buildings, Avenue Road, Bangalore City).
2. Karnataka-gata-vaibhava by Alur Venkata Rao of Dharwar, price reduced to Re. 1 only (Karnataka Sikshana Samiti, Dharwar).

MALAYALAM, 1940.

(Will be prescribed later).

APPENDIX VI.

B.Sc. (HONOURS) DEGREE EXAMINATION.

Syllabus.

Branch (i)—Mathematics.

The following is the list of subjects from which special subjects are to be selected under each of the divisions specified in (c) under Part II—I Mathematics in Regulation 2 of Chapter XLVI.

Note.—The Board of Studies may from time to time add to the list or exclude subjects from the list, either temporarily or permanently.

Two of the following subjects at the option of the candidate:—

1. *Dynamics*—
 - (1) Advanced Rigid Dynamics.
 - (2) Theoretical Dynamics.
2. *Astronomy*—
 - (1) Planetary and Lunar Theories.
 - (2) Physical and Practical.
3. *The Potentials.*
4. *Elasticity.*
5. *Hydrodynamics and Sound*—
 - (1) Irrotational motion of liquids.
 - (2) Propagation of sound in gases.
6. *Heat*—
 - (1) Conduction of Heat.
 - (2) Thermodynamics.
 - (3) Kinetic Theory of Gases.

ASTRONOMY.

PLANETARY AND LUNAR THEORIES.

A. *Dynamical Principles.*—Lagrange's equations and the Lagrangian function. Hamilton's principle and the derivation of the equations of dynamics by the variation of Hamilton's principal function. The ordinary Hamiltonian equations and the

canonical equations of dynamics. The necessary and sufficient condition that a change of variables should leave the canonical form of the equations (in the new variables) unchanged. Hamilton's theorem that the principal function satisfies a partial differential equation when the constants of integration of the canonical equations are the initial values of the co-ordinates. The Hamilton-Jacobi partial differential equation and its relationship to the solution of the canonical equations.

B. Newton's Law of Universal Gravitation and the problem of two particles.—Kepler's Laws. Newton's deduction of the Law of Gravitation from Kepler's Laws. Possible forms of force in order that a particle may describe a conic section under the action of a central force. Bertrand's first theorem that the only laws of central force which are functions of the distance, under the action of which a particle will describe a conic are $f = \pm \frac{K^2}{r^3}$ and $f = \pm K^2 r$. Bertrand's second theorem that the only laws expressible as functions of the distance, which always give rise to closed orbits, whatever the initial circumstances may be (within a certain range) are $f = \pm \frac{K^2}{r^3}$ and $f = \pm K^2 r$. Evidence of double star systems: Newton's Law of Gravitation universal.

Elliptic motion. The fundamental equations of elliptic motion. Bessel's functions and the relations between the functions of different order. The expansions of the radius vector, the eccentric anomaly; the true anomaly, etc., in terms of the eccentricity of the orbit. Convergence of these series.

C. The problem of n bodies.—Planetary Theory.—The potential of an attracting system and its relation to the force of attraction. The potential and attraction of a spherical shell at internal and external points. The potential and attraction of any heterogeneous spherical body which is made up of concentric spherical shells of the same density. The potential of a body at a distant point. The motion of n heavenly bodies under the law of gravitation is practically the same as the motion of n massive attracting particles. The integrals of the equations of motion of n particles. Jacobi's equation establishing a necessary condition for the stability of the system. Radau's transformation of the form of kinetic energy and the angular momentum and the resultant form of the equations of motion. Heliocentric co-ordinates and the equations of motion in terms of them. The disturbing function. Advantages and disadvantages of either of the above two forms of the equations of motion. Solution of the equations

$\frac{(S+m)r^2}{r^3} \frac{\delta R}{\delta u} = -$ by the method of the variation of parameters.

Intermediate orbits, Lagrange's brackets and Poisson's brackets and their relationship to each other. The equations of motion expressed in terms of them and the six arbitrary constants of

the solution of the equations where $R=0$. The Lagrange brackets do not contain the time explicitly. The equations of motion expressed in terms of the Lagrange brackets reduced to the canonical form when the six arbitrary constants are the initial co-ordinates and velocities of the moving body. The expression of a Lagrange bracket in terms of the elements of the orbit.

The canonical elements and the canonical form of the equations of motion when these are used. Jacobi's method of solving the equations of elliptic motion by means of the partial differential equation. Jacobi's equations for disturbed elliptic motion. The canonical constants of Jacobi, Delaunay and Poincare. The expressions for the Lagrange brackets and the Poisson brackets containing the elements. The equations for the variation of the elements and the disturbing forces expressed in terms of the partial differential co-efficients of the disturbing function with respect to the element. Elementary proof for the equation for $\frac{da}{dt}$. The difference between secular inequalities and periodic inequalities. Examples of a resisting medium. Long period inequalities and short period inequalities. The inequalities of the Jupiter—Saturn system. The major axes and the mean motions of planets have no secular inequalities in the first approximation. The application of Radau's transformation and the resultant formulae to the proof of Poisson's theorem that the major axes of planets have no purely secular inequalities even in the second approximation. (The proof of Poisson's theorem is excluded).

D. The Lunar Theory.—The equations of the Sun relative to the centre of gravity of the Earth and the Moon. The motion of the Sun is practically elliptic. The equations of motion of the Moon relative to the earth. Form of the disturbing function. Jacobi's quasi-integral for the Moon's motion (i.e., under the assumption that the Sun moves in a circle). Pontecoulant's equations of motion and their solution up to the second approximation. Variational inequalities. Elliptic inequalities. The Evection. The motion of Perigee. Mean period inequalities. The Annual equation. Parallax inequalities. The latitude equation and the motion of the node. Hill's form of the equations of motion of the Moon. Reduction to one equation giving both the radius vector and the longitude to any desired degree of approximation. The variational curve. Differential equations for small displacements from the variational curve. Hill's equation for the normal displacement, viz., $\frac{d^2 N}{dt^2} = \Theta N$ applies to all inequalities independent of the eccentricity of the Sun's orbit. The infinite determinant. Motion of the perigee and the node. Outline of the method of finding the displacement of the Moon from the variational curve when the eccentricity of the Sun's orbit and the parallax are not neglected.

(a) Books recommended for Study—

- (1) E. W. Brown's Lunar Theory omitting Chapters IX, X and XIII and greatly restricting Chapter XI.
- (2) H. C. Plummer's Dynamical Astronomy. Chapters I, II, IV, XII, XIII, XV, XX and XXI greatly restricting the last two.
- (3) Hill's Lunar Theory as given in Vol. V of Darwin's Scientific Papers.

(b) Books for Reference—

- (1) F. R. Moulton's Introduction to Celestial Mechanics.
- (2) Cheyne's Planetary Theory (out of print).
- (3) J. C. Adam's Lectures on the Lunar Theory (out of print).
- (4) Dziobek's Mathematical theories of Planetary motions.
- (5) Poincare's Lecons de Mecanique Celeste Tomes I and II.
- (6) Tisserand's Traite de Mecanique Celeste Tomes I and II.

CONDUCTION OF HEAT.

General differential equation for isotropic bodies and for homogeneous bodies. Boundary conditions, uniqueness of solution.

Isothermal surfaces in homogeneous infinite solid. Solution in the following cases of isotropic bodies.

(A) *The Linear Flow.—Complete Study.* (1) The infinite solid. (2) The semi-infinite solid; various problems in constant, variable and periodic temperature at the surface, with application to terrestrial temperature. Reduction of the problem of cooling by radiation to the problem of cooling by conduction. (3) The finite rod, including Fourier's ring. Solution by Fourier's series for constant, variable and periodic temperature at the surface. Angstrom's method for finding conductivity experimentally. (4). Heat sources, instantaneous and continuous; application to semi-infinite solid, finite rod; and Fourier's ring, when there is no radiation (5) Application of Green's function in heat to simple cases of linear flow, not including radiation.

(B) *The flow in more than one dimension.—Simple study.* Simple cases of steady and variable temperature for infinite solid, semi-infinite solid and finite rod. Application of conjugate functions to problems of steady temperature in two dimensions.

(C) *Radial flow.*—The infinite and semi-infinite circular cylinder with or without radiation, initial temperature being constant or a function of the distance only. The sphere, with or without radiation, initial temperature being a function of the distance only. Spherical surface source.

(D) *Conduction of heat in crystalline bodies.*

Standard to be found in Carslaw:—

Chapters IX—XIV nearly complete.

Chapters XV—XVIII greatly restricted.

Books recommended:—

- (1) H. S. Carslaw:—Mathematical theory of the conduction of heat.
- (2) J. Boussinesq:—*Theorie Analytique de la chaleur.*
- (3) H. Poincare:—*Theorie Analytique de la propagation de la chaleur.*
- (4) L. R. Ingersoll and O. J. Sobel:—*An Introduction to the Mathematical Theory of Heat Conduction.*
- (5) Fourier:—*Theorie Analytique de la chaleur* (English translation by Freeman.
- (6) Preston:—*Theory of Heat.*

Note:—For syllabuses in other subjects under this Branch vide Appendix IV, (pages 483—498).

Branch II—Physics.

PHYSICS—MAIN.

PROPERTIES OF MATTER.

*Acceleration due to Gravity:—*Atwood's machine—bifilar suspension—simple pendulum—Compound pendulum—theory of Kater's reversible pendulum—corrections for (1) finite arc of swing, (2) air drag, (3) rounding of knife edges, (4) yielding of support, (5) damping of oscillations, (6) gravity variations—small oscillations—ball on a concave surface—rod on a cylinder.

*Attractions and Potentials:—*Constant of Gravitation—mass and density of the earth—measurement of the Constant of Gravitation—potential due to a (1) spherical shell, (2) solid sphere at a point outside and at a point inside, (3) uniform rod.

*Elasticity:—*Hooke's Law—stress, strain, moduli of elasticity of homogeneous bodies and their relations with one another—torsion of a cylinder—torsional oscillations (and coupled oscillations)—bending of beams—cross section of cantilever and beams supported at two knife edges and clamped at the ends—Searle's method for elastic constants of a wire—reciprocity of load and depression—Koenig's method for beams—beam bending under its own weight—spiral springs, flat and oblique—depression due to load and expressions for periods of oscillation vertical and angular—elastic curves and stability of loaded pillars—isothermal and adiabatic elasticities—bulk modulus of liquids—compressibility and tensile strength of liquids—compressibility of gases.

Surface Tension:—Molecular forces—total surface energy—pressure on a curved membrane by application of the principle of virtual work—stability of nearly cylindrical films—angle of contact and its measurement—measurement of surface tension by capillary ascent. Quincke's method of large drops, Rayleigh's method of ripples—oscillation of a spherical drop of liquid—detachment of plates—Jaeger's method and variation of surface tension with temperature—Thermo-dynamical application for temperature alterations accompanying sudden alterations of area of films—surface tension of very thin films—variation of surface tension with contamination of surface—vapour pressure over a curved surface—formation of drops—Laplace's theory of capillarity, the constant and the estimate of its value.

Osmosis and Diffusion in Liquids:—Laws of osmosis—diffusion of liquids and Fick's Law—methods of measuring co-efficient of diffusion—vapour pressure over a solution—elevation in boiling point and depression in freezing point—Brownian movement—Perrin's experiment and determination of Avogadro's number from observations of colloidal particles along a vertical column—co-efficient of diffusivity and displacement of colloidal particles.

Viscosity:—Definition—flow of a liquid through a capillary tube—flow of a gas through a capillary tube—methods of measurement of the co-efficient of viscosity and its variation with temperature for liquids and gases—revolving cylinders—method of the revolving disc—viscosity of gases and its variation with temperature and pressure—method of dimensions applied to viscous drag of a body moving through a liquid.

Pumps and Pressure Gauges:—Diffusion pumps and molecular pumps—McLeod gauge.

HEAT.

Thermometry:—Mercury thermometers; gas thermometry—standard gas thermometers, constant volume and constant pressure types: perfect gas scale; reduction of readings on a gas thermometer to the perfect gas scale; resistance thermometry and thermo-electric thermometry.

Calorimetry:—Specific heat of solids—method of mixture. Nernst calorimeter, E. H. and E. Griffith's experiments, liquid air and liquid hydrogen calorimeters; experiments at high temperatures.

Specific heat of liquids:—Method of mixture; Callendar's continuous flow method; method of cooling. Specific heat of water—experiments of Joule, Rowland, Griffiths, Callendar and Barnes, Laby and Hercus, Jaeger and Steinwehr. First law of thermo-dynamics.

Specific heat of gases:—(i) At constant volume—Jolly's steam calorimeter, Piar's explosion method, Eucken's experiments on hydrogen at low temperatures; (ii) at constant

DEGREE EXAMINATION.

pressure—experiments of Regnault, Holborn and Henning, Swam, Scheel and Heuse. Ratio of specific heats—experiments of Clement and Desormes, Lummer and Pringsheim, Kundt, Partington, and Shilling and Dixon.

Fusion:—Latent heat of fusion; Bunsen's ice calorimeter; measurement of latent heat of fusion of metals.

Evaporation:—Latent heat of vaporisation—experiments of Hennings, Simon and Lange, Berthelot, Awbery and Griffiths; Trouton's rule.

Thermal expansion:—Linear expansion of solids, of crystals; Fizeau's interference method, Robert's optical lever method; Gruneisen law.

Expansion of liquids—hydrostatic method, Callendar and Moss apparatus.

Continuity of state:—Compressibility of gases at high pressures, Andrews' experiments, properties of Van der Waals' equation, comparison with experiments, law of corresponding states; Berthelot's equation of state. Critical phenomena; properties of a substance near the critical point. Liquefaction of gases; principle of cascades. Joule—Thompson effect, the porous-plug experiment—Huxton's apparatus; air liquefiers; liquefaction and solidification of hydrogen and helium; use of liquid air and other liquefied gases. Production and measurement of very low temperatures.

Thermal conductivity:—Rectilinear flow of heat in an isotropic body, Fourier's linear diffusion law, diffusivity; steady state. Ingen-Hausz's experiment; Forbes' method, Angstrom's method; conductivity of earth's crust. Electrical methods—Kohlrausch experiments by Jaeger and Dieselhorst, conductivity of poorly conducting materials. Wiedemann—Franz law, simple theory—Drude, difficulties of the theory. Super conductivity. Euiken's determination of conductivity of crystals.

Conductivity of liquids—Film method:—Conductivity of gases—hot wire method, cooling thermometer method, film method; variation of conductivity with temperature and pressure, relation between thermal conductivity and viscosity; determination of molecular dimensions.

Thermo-dynamics:—First law, application to specific heats, work done in isothermal and adiabatic expansions.

Heat engines, the Carnot engine, efficiency, Carnot's theorem; Rankine's cycle, performance of an actual steam engine, the indicator, the I.H.P. and B.H.P., mechanical efficiency, thermal efficiency. Internal combustion engines—the Otto cycle, the Diesel cycle; refrigerating machines, co-efficient of performance. Second law of thermo-dynamics, absolute scale of temperature; entropy, reversible and irreversible processes, principle of increase of entropy.

Maxwell's thermo-dynamical relations, application to specific heats, Joule-Thomson effect, correction of gas thermometer, thermo-dynamic potential at constant volume—Gibbs—Helmholtz equation; thermo-dynamic potential at constant pressure—application to change of state, equations of Clapeyron and Clausius; specific heat of saturated vapour, triple-point.

Radiation :—Theory of exchanges; Kirchoff's law—application and quantitative proofs: temperature radiation, black body—realisation of pressure of radiation—experimental proof, energy density and pressure of diffused radiation—Boltzmann's proof of Stefan's law, experimental verification and determination of Stefan's constant—Coblentz. Radio-meters, radiation pyrometers—Fery, optical pyrometers. Solar constant—Pyrheliometers, effective temperature of the Sun—total radiation method, Wien's distribution law method.

Adiabatic expansion of radiation, Wien's displacement law, experimental verification.

Number of independent vibrations of a continuous medium, Rayleigh's radiation formula. Planck's radiation formula, experimental verification of Planck's law—the isothermal and isochromatic methods, determination of h , Planck's constant.

Specific Heats and Quantum Theory:—Solids—Dulong and Petit's law, its failure, Einstein's theory, and Debye's theory of specific heat of isotropic solids; comparison with experimental results. Gases—degrees of freedom, the equipartition of energy—specific heats, comparison with experimental values; specific heat of hydrogen at low temperatures. Application of quantum theory to di-atomic gases.

ELECTRICITY.

Electrostatics:—Gauss' theorem—potentials and intensities for a sphere, cylinder and plane—electric doublet—capacities, spherical, cylindrical and parallel plate—measurement of specific inductive capacity—force on a charged conductor and energy in the medium—boundary conditions of intensities in different media separated by two dielectrics—electrostatic machines—Attracted disc electrometer—Quadrant electrometer—method of images—point charge in front of (1) a conducting plane (2) a dielectric plane—point charge in front of a conducting sphere—conducting sphere in a uniform field—dielectric sphere in a uniform field.

Magnetism:—Potential and force due to a small magnet and due to a magnetised body—potential of magnet in magnetic field—potential due to a shell and potential of a shell in a uniform field—uniformly magnetised sphere—theories of magnetism—magnetic induction, permeability, susceptibility—study of hysteresis—methods of measuring the above—Paramagnetism and Diamagnetism.

Electric Circuits:—Ohm's law—resistance—heating effect—Kirchoff's laws—theory of the Wheatstone's net—Faraday's laws of electrolysis.

Magnetic Effect of a Current:—Work done in taking a magnetic pole round a closed circuit—magnetic force due to an infinitely long straight current—magnetic force inside a conductor carrying a current—solenoids and endless solenoids—magnetic force due to a circular current—Helmholtz's galvanometer—mechanical force acting on a conductor carrying a current placed in a magnetic field—coefficient of self and mutual induction—theory of alternating current generators and direct current generators and motors—growth and decay of a current in an inductive circuit under constant E.M.F.—alternating E.M.F. in a circuit with resistance and inductance—impedance, reactance—virtual volts and virtual amperes—energy in circuits—coil rotating in a magnetic field—theory of transformers—repulsion between a conductor and an alternating current circuit—rotating magnetic field—current produced in a mass of metal by an impulse and distribution of an alternating current in a conductor—oscillatory discharge of a condenser—alternating E.M.F. acting in a circuit containing a condenser—methods of measuring co-efficient of self-induction and mutual-induction—theory of the ballistic galvanometer (moving coil and moving magnet types).

Primary Cells:—Applications of thermo-dynamics—Helmholtz's equation—reversible cells—standard cells—theory of secondary cells.

Thermo Electricity:—Peltier effect—Thomson effect—thermo-electric E.M.F.'s and diagrams.

Units and Dimensions:—Electrostatic, magnetic and electromagnetic quantities—ratio of units.

Absolute measurements:—Measurement of the ohm (Lord Rayleigh's and Lorentz's methods)—Maxwell's method for capacities—the absolute current and absolute E.M.F.

Electromagnetic Waves:—Maxwell's equations and solution for wave-propagation—Hertz's experiments—reflection, refraction, polarization of electric waves—stationary waves—detection of waves—cystal detector, triode valve detector—oscillators—Duddel's arc—Poulson's arc—Lecher wires—cymometers—determination of dielectric constants by oscillations.

Passage of Electricity through Gases:—Discharge at low pressure—nature and properties of cathode rays—nature and properties of X-rays—determination of v , e/m and e . (J. J. Thomson, C. T. R. Wilson, Millikan)—method of leakage by ultra-violet light—conduction in ionised gas and saturation current—secondary X-rays—X-ray spectroscopy—canal rays, J. J. Thomson's experiment—mass spectra and Aston's experiments—radioactivity and radioactive emanations—constitution of the atom—nuclear theory.

SOUND.

Dynamical:—Harmonic waves, longitudinal progressive waves; plane waves in a gas. Speed of sound in a gas and in a solid rod. Speed of transverse waves along a cord. Reflection at a fixed and open end. Energy of progressive waves.

Damped S. H. M., forced S. H. M.; energy of forced vibrations and sharpness of resonance; coupled oscillations—without damping, multiple resonance. Theory of combinational tones.

D'Alembert's equation and its solution; vibration of strings—plucked string, struck string and bowed string; torsional vibrations of rods; transverse vibrations of bars—application to tuning fork; vibrations of rectangular stretched membranes—Chladni's figures.

Vortex formation and Aeolian tones; vibrations of air in wide tubes; open-end corrections; conical tube; edge tones; the organ pipe.

Physical:—Resonators—Helmholtz's resonator, theory and application; resonators with variable neck and multiple openings. Rayleigh's disc and phonometer, hot wire microphone; striae in Kundt's tube; pressure of sound waves; sound radiometers; piezo electric quartz resonator. Electrical analogy—acoustic impedance, inductance and capacitance, acoustic filters; double resonators, applications to sound intensity measurements and measurement of absorption co-efficients by stationary wave method; absolute pressure measurements.

Velocity of sound in solids, liquids and gases and its determination. Frequency and its determination. Reflection and refraction of sound. Doppler's principle. Sound-wave photography and acoustics of buildings. Spark and ripple-tank methods.

The ear, limits of audition, minimum amplitude audible and its measurement, theories of audition, mechanism of nerve conduction. Consonance and dissonance, the musical scales, temperament.

Quality of sound, its analysis; acoustic spectra; Miller's Phonodeik, oscillographs; the voice; analysis of speech sounds, harmonic and inharmonic theories, Paget's experiments, Miller and Crandell's work. Speech power, sensation, unit-decibel; noise and its measurement.

Gramophones and loud speakers; the phonofilm.

LIGHT.

Geometrical Optics:—Principal foci and focal planes; linear and longitudinal magnification; thin lenses, combination of two thin lenses and cardinal points; thick lenses, and cardinal points.

Dispersion and achromatism; dispersive power; chromatic aberration, achromatic combinations of prisms and of thin lenses; object glasses and eye-pieces.

Spherical aberration, caustics, circle of least confusion, aplanatic surfaces, aplanatic points and microscope objectives; remedy for spherical aberration; astigmatism, curvature, distortion. Figuring of a spherical surface—Foucault's test.

Optical instruments; spectroscope, constant deviation type and direct vision type; telescopes; microscopes; sextant; binoculars; stereoscope; photographic camera; telephotography and microphotography.

Spectrometry:—Calibration of spectrometers; Hartmann's dispersion formula. Production of spectra; types of spectra; Doppler's principle and applications. Spectrometry of infra-red rays, of visible rays, and ultra-violet rays.

The rainbow:—Spurious bows, Airy's explanation, Miller's experiments.

Velocity:—Fizeau's method, Foucault's method, Newcomb's experiments; Michelson and Pearson's experiments. The astronomical methods.

Wave Theory:—Huyghens' principle: reflection and refraction at plane and spherical surfaces; optical length and optical distances; Fermat's principle and its application; rectilinear propagation of light; zone plate.

Interference:—Conditions necessary for interference; Fresnel's mirrors; bi-prism; Lloyd's mirror, bi-plate; colours of thin films; thick plates; Newton's rings; Haidinger's fringes.

Refractometers; variation of refractive index with density, Gladstone and Dale's law, Lorentz—Mossotti formula. Michelson's interferometer; determination of refractive index and dispersion; determination of the length of standard meter; measurement of the diameter of stars; the echelon grating; Fabry and Perot's interferometer; Lummer and Ghercke's interferometer. Stationary light waves, colour photography. Testing glass plates for flatness and plane-parallelism.

Diffraction:—Elementary theory of diffraction at a straight edge, narrow wire, narrow rectangular aperture, circular aperture, circular disc. Babinet's principle; halos, Young's Eriometer. Plane diffraction grating, dispersive power, resolving power, purity of spectrum, absent spectra; concave grating, Rowland mounting, Eagle mounting; measurement of wave length. The graphical method of investigating the intensity of diffraction patterns in the cases considered above. Diffraction at a straight edge, Fresnel's theory; Cornu's spiral. Fraunhofer diffraction phenomena, determination of maxima and minima in the case of a narrow rectangular aperture, two equal rectilinear apertures and the diffraction grating. Resolving power of a prism, a telescope and a microscope.

Polarisation:—Polarisation by reflection and refraction; Norremberg's polariscope; law of Malus; pile of plates. Polarisation by double refraction, Nicol's prism. Huyghens' construction of wave surfaces in uni-axial crystals; experimental

verification. Fresnel's theory of double refraction; the normal velocity surface, the wave surface; axes of single wave velocity; internal conical refraction; axes of single ray velocity; external conical refraction. Interference of polarised light—colours of thin crystalline plates in (i) parallel plane polarised light; (ii) convergent or divergent plane polarised light; isochromatic and achromatic lines in uni-axial and bi-axial crystals. Production and detection of (1) plane polarised light (2) circularly polarised light—Fresnel's rhomb (3) elliptically polarised light—Babinet's compensator, determination of the constants of elliptical polarisation. Elliptical polarisation by reflection. Rotation of plane of polarisation; Fresnel's explanation of rotation; Fresnel's experiments; Cornu's prism; Babinet's experiments; rotation of plane of polarisation by liquids; polarimeters. Rotatory dispersion. Experimental study of the Faraday Effect.

Electro-magnetic Theory of Light:—Derivation of Maxwell's equations, displacement currents, equation for an electro-magnetic wave, velocity of the wave; deduction of the laws of reflection and refraction for transparent media, perpendicular incidence; explanation of total reflection; explanation of metallic reflection.

The theory of dispersion—Cauchy, Sellmeier, Helmholtz's electron theory of dispersion, normal dispersion, anomalous dispersion. Selective reflection—Rest-strahlen—residual rays from powders.

MODERN PHYSICS.

The subject matter contained in Richtmeyer's "Introduction to Modern Physics" with the addition of the following:—

Scattering of Light:—

- (a) Theory of molecular scattering by Rayleigh and Schuster; scattering of light in gases and in liquids—the blue of the sky, the colour of the sea; Einstein and Smoluchowski; work of Rayleigh, Cabannes, Raman and Ramanathan.
- (b) Experimental method of investigating the Raman effect; intensity and polarisation of the Raman lines; Raman effect in gases, liquids and crystals; relation to infra-red and ultra-violet absorption; Raman effect and chemical constitution.

Associated with the syllabus in "Modern Physics" given above, there should be arranged a related course of practical work, and the following experiments are suggested to make up this course:—

- (1) Determination of the radiation constant.
- (2) Variation of the photo-electric current with light intensity.
- (3) Simple valve circuits—(a) for transmission of signals.
(b) for reception of signals.

(4) Quartz Mercury lamp illumination and the spectrograph:—

(a) The Balmer hydrogen lines; evaluation of Rydberg's constant.

(b) Use of Hartmann's interpolation formula.

(5) The Zeeman effect.

TEXT-BOOKS.

1938.

Books for Study—

General—

1. Poynting and Thompson: Properties of Matter.
2. Newman and Searle: Properties of Matter.
3. Barton: Text Book of Sound.
4. Richardson: Sound.
5. Preston: Theory of Heat.
6. Preston: Theory of Light.
7. Starling: Electricity and Magnetism.
8. Worsnop and Flint: Practical Physics.

Special Subjects—

9. Greenwood: Text-Book of Wireless Telegraphy and Telephony.
10. De Broglie: X-Rays.
11. Bloch: Kinetic Theory of Gases.

Modern Physics—

12. Richtmeyer: Introduction to Modern Physics.

Books for Reference—

General—

1. Lamb: Dynamics.
2. Edser: General Physics.
3. Searle: Experimental Elasticity.
4. Searle: Experimental Harmonic Motion.
5. Houstoun: Light.
6. Clay: Treatise on Light.
7. Thompson, J. J.: Elements of Electricity and Magnetism
8. Pidduck: Treatise on Electricity.
9. Jeans: Electricity and Magnetism.
10. Clayton: Alternating Currents.
11. Lamb: Dynamical Theory of Sound.
12. Schuster: Theory of Optics.
13. Baly: Spectroscopy.

14. Wood: Sound.
15. Saha and Srivatsa: A Text-Book of Heat.
16. Millikan: The Electron.
17. Watson: Practical Physics.

Modern Physics—

18. Castel-Franchi: Recent Advances in Atomic Physics (2 Volumes).
19. Newman, F. H.: Recent Advances in Physics.
20. Harnwell and Livingood: Experimental Atomic Physics.

Special Subjects—

21. Palmer: Principles and Practice of Wireless.
22. Stanley: Text-Book of Wireless Telegraphy (2 Vols.).
23. Henney: Principles of Radio.
24. Compton: X-Rays.
25. Seigbahn: Spectroscopy of X-Rays.
26. Bragg: X-Rays and Crystal Structure.
27. Clark: Applied X-Rays.
28. Loeb: Kinetic Theory of Gases.

1939 and 1940.

Same as for 1938, with the following changes:—

- A. H. Compton's "X-rays and Electrons" to be removed from the list of Books for reference under Radiation-B, and the book, A. H. Compton and S. K. Allison's "X-rays in theory and experiment"—Macmillan May 1935—31 s. 6 d.—be inserted in its place.

Branch III—Chemistry.

SYLLABUS IN BIOCHEMISTRY.

Theory.

Physical phenomena in vital processes, e.g., Diffusion, Permeability, Osmosis, Surface Action, Adsorption, etc.

Enzymes and the mode of their action. Chemistry of fermentation.

Chemistry of carbohydrates, fats, lipins, sterols, proteins.

Metabolism of fats, carbohydrates and proteins. Basal metabolism.

Chemical changes accompanying the phenomena of muscular contraction and muscular fatigue.

Blood and its composition. Chemistry of Haemoglobin.

Chemistry of plant pigments: Anthocyanins, Carotinoids. Chlorophyll. Tannins.

Internal secretions of the ductless glands: Their function and general relation to metabolism. Chemistry of the active principles of internal secretions with special reference to adrenaline, insulin, thyroxin, pituitrin and oestrin.

Drugs and their mode of action. Relation between physiological action and chemical structure.

Toxins and Anti-toxins. Ehrlich's side-chain theory. Chemotherapy.

Vitamins.

Practical.

Methods of preparation of enzymes by dialysis, adsorption and elusion. Preparation of malt and a study of the hydrolysis of starch.

Determination of hydrogen-ion concentration (*a*) potentiometrically, and (*b*) by indicators. Determination of the isoelectric point of casein.

Estimation of sugars (*a*) by Bertrand's method, and (*b*) polarimetrically.

Preparation of Glycine, Cystine, Tyrosine, Creatine, Cholesterol and Glycogen, from natural sources.

Analysis of milk. Analysis of urine. Estimation of sugar and urea in (*a*) urine, and (*b*) blood.

Estimation of amino-acids by Van Slyke's method. Estimation of peroxidases in common vegetables.

Elementary bacteriological technique: Preparation of media, sterilisation, isolation of pure organisms by culture, staining and mounting for photomicrographs.

Determination of phenol-coefficients of different disinfectants (Rideal-Walker Method).

Text-books recommended for study for Branch III—Chemistry.

1938

The following books are recommended in addition to the books recommended for the Pass Group (ii-B), Course:—

Ostwald: Scientific foundations of Analytical Chemistry (Macmillan).

Ladenburg: History of Chemistry (Simpkin).

Thorpe: Essays in Historical Chemistry (Macmillan).

Holleman: Organic Chemistry (Wiley).

Cohen: Organic Chemistry for Advanced Students (Arnold).

Lewis: System of Physical Chemistry (Longmans).

Le Blanc: Electro-Chemistry (Macmillan).

Findlay: Phase Rule (Longmans).

- Fajans: Radioactivity (Methuen).**
Treadwell and Hall: Qualitative and Quantitative Analysis (Wiley).
Dennis: Gas Analysis (Macmillan).
Sudborough and James: Practical Organic Chemistry (Blackie).
Clarke: Handbook of Organic Analysis (Arnold).
Spencer: Experimental Course of Physical Chemistry (Bell).
Hedge: Chapters in Modern Inorganic and Theoretical Chemistry (Arnold).
L. Gattermann: Laboratory Methods of Organic Chemistry, revised by Heinrich Wieland, 1932 Edn. (Macmillan).
Sidgwick's Electronic Theory of Valency (O. U. P., 1927).

Reference—

- Nernst: Theoretical Chemistry (Macmillan).**
Alembic Club: Reprints (Simpkin).
Chemical Society: Memorial Lectures, 2 Volumes (Gurney).
Mellor: Treatise on Inorganic and Theoretical Chemistry (Longmans).
Spencer: Metals of the Rare Earths (Longmans).
Roberts Austen: Introduction to Metallurgy (Griffin).
Schmidt: Organic Chemistry (Gurney).
Sidgwick: Organic Chemistry of Nitrogen (Oxford University Press).
Stewart: Stereo-Chemistry (Longmans).
Haworth: Constitution of Sugars (Arnold).
Bayliss: Enzyme Action (Longmans).
Cain and Thorpe: Synthetic Dye Stuffs (Griffin).
Perkin: Natural Organic Colouring Matters (Longmans).
Soddy: Interpretation of Radium and the Structure of the Atom (Murray).
Bragg: X-rays and Crystal Structure (Bell).
Stewart: Recent Advances in Physical and Inorganic Chemistry (Longmans).
Partington: Chemical Thermodynamics (Constable).
Prideaux: Problems in Physical Chemistry (Constable).
Smiles: Chemical Constitution and Physical Properties (Longmans).
Miers: Mineralogy (Macmillan).
Blitz: Laboratory Methods of Inorganic Chemistry (Wiley).
Low: Technical Methods of Ore Analysis (Wiley).

Ephraim: Inorganic Chemistry (Gurney).

Taylor: Treatise on Physical Chemistry (Macmillan).

Beringer: Text-book of Assaying (Griffin).

Lunge: Technical Chemists' Handbook (Gurney).

Perkin: Practical Methods of Electro-Chemistry (Longmans).

Cole: Practical Physiological Chemistry (Heffer).

Bodansky: Introduction to Physiological Chemistry (Wiley).

Pryde: Recent Advances in Bio-Chemistry (Churchill).

Onslow's Principles of Plant Chemistry (C.U.P.).

Morrow's Practical Bio-Chemistry (Chapman and Hall).

Mulliken's Organic Analysis, Vols. I, II and IV (Wiley).

1939 and 1940.

The same as for 1938, with the addition of the following to the list of books for reference:—

Chemistry in the Twentieth Century edited by E. F. Armstrong (Ernest Benn Ltd.).

Physics (Subsidiary)—

The same as for B.A. or B.Sc.—Subsidiary—Physics.

Branch V—Natural Science.

ZOOLOGY—(MAIN).

Theory—

1. Parker and Haswell: A Text-book of Zoology—2 Vols. (Macmillan).
2. Sedgwick (A.): Student's Text-book of Zoology—3 Vols. (Swan Sonnenschein).
3. Lang (A.): Text-book of Comparative Anatomy—2 Vols. (Macmillan).
4. Weidersheim: Elements of the Comparative Anatomy of Vertebrates (Macmillan).
5. Graham Kerr: Zoology for Medical Students. (Macmillan).
6. MacBride (E. W.): Text-book of Embryology—Vol. I—Invertebrata (Macmillan).
7. Graham Kerr: Text-book of Embryology—Vol. II—Vertebrata (Macmillan).
8. Doncaster: Introduction to the Study of Cytology: (Cambridge University Press).
9. Lull: Organic Evolution. (Macmillan).
10. Punnett: Mendelism. (Macmillan).

11. Thomson (J. A.): Heredity. (John Murray).
12. Kellogg: Darwinism to-day. (George Bell & Sons).
13. Lock: Variation, Heredity and Evolution. (John Murray)
14. Ray Lankester: Extinct Animals. (Constable).
15. Beddard (F): Zoogeography. (Cambridge University Press).
16. Jenkinson: Vertebrate Embryology. (Oxford University Press).
17. Walter: Genetics (Macmillan).
18. Agar: Cytology (Macmillan).
19. Kellicot: Chordate Development (Constable).
20. Kellicot: General Embryology (Constable).
21. Studies on the Structure and Development of the Vertebrates by E. S. Goodrich (Macmillan).
22. Outlines of the Comparative Anatomy of Vertebrates—Kingsley. John Murray & Co.
23. Vertebrate Skeleton from the Developmental Standpoint—Kingsley. John Murray & Co.

Practical.—

In addition to the books prescribed for B.A. Main, the following books are recommended:—

1. Chadwick: The Marine Plankton. (University Press of Liverpool).
2. Ward and Whipple: The Freshwater Biology. (Chapman and Hall).
3. Fowler Herbert: Science of the Sea. (John Murray).
4. Lee: Microtommists' Vade Mecum. (J. and A. Churchill).
5. Guyer: Animal Micrology (Uni. Press, Chicago).
6. Carleton: Histological Technique (Oxford Medical Publications).

Reference—

1. Ray Lankester (F); A treatise on Zoology—9 parts. (A. and C. Black & Sons).
2. Cambridge Natural History—10 Volumes, (Macmillan).
3. Volumes of the Fauna of British India.
4. Wilson: Cell in development and heredity. (Macmillan).
5. Minchin: Introduction to Protozoa. (Arnold).
6. Calkin: Biology of the Protozoa. (Bailliere Tindall).
7. Castle: Genetics and Eugenics. (Harvard University Press, Cambridge).
8. Bateson: Problems of Genetics. (Yale University Press).

9. Ruggles Gates: Mutation factor in Evolution. (Macmillan).
10. Charles Darwin: Origin of species (John Murray).
11. Doncaster: Determination of Sex. (Cambridge University Press).
12. Morgan: Mechanism of Mendelian Heredity. (Henry Holt).
13. Morgan: Physical Basis of Heredity. (Lippincott).
14. Goldschmidt: The Mechanism and Physiology of Sex determination (Translated by Dakin). (Methuen).
15. Wenyon: Protozoology—2 Vols. (Bailliere, Tyndal & Cox).
16. De Beer: Vertebrate Morphology. (Sidgwick & J.).

Journals—

1. Nature.
2. Quarterly Journal of Microscopical Science.
3. Proceedings of the Zoological Society.
4. Proceedings of the Royal Society, London.
5. Philosophical Transactions of the Royal Society, London.
6. Journal of Experimental Zoology.
7. Records of the Indian Museum.
8. Memoirs of the Indian Museum.
9. Nordisches Plankton.
10. Journal of the Royal Microscopical Society.
11. Quarterly Biological Abstracts.

SUBSIDIARY.

Theory—

1. Shipley and MacBride: Text-book of Zoology. (Cambridge University Press).
2. Parker and Haswell: Text-book of Zoology, 2 Vols. (Macmillan).
3. Hegner: College Zoology (Macmillan).

Practical—

1. Marshall: The Frog. (Macmillan).
2. Marshall and Hurst: Practical Zoology. (Smith Elder & Co.).

Reference—

1. Sedgwick (A): Student's Text-book of Zoology, 3 Vols (Swan Sonnenschein).
2. Borradaile: Animal Life and its Environment. (Henry Frowde and Hodder and Stoughton).

3. Lull: Organic Evolution. (Macmillan).

4. Charles Darwin: Origin of Species (John Murray).

Branch VI—Geology.

(a) *For reading and study—*

A. Geikie: Text-book of Geology—2 Vols.

J. D. Dana: Text-book of Mineralogy.

James Geike: Structural and Field Geology.

R. M. Chalmers: Geological maps.

Woods: Palæontology.

Swannerton: Outlines of Palæontology.

Thomas and Macalister: Ore Deposits.

Wadia: Indian Geology.

(b) *For reference and consultation.—*

Chamberlin & Salisbury: Geology—3 Vols.

Arthur Holmes: Petrographic Methods and Calculations.

A. Harker: Natural History of Igneous Rocks.

Daly: Igneous Rocks and Their Origin.

A. Johannsen: Petrographic Methods.

Zittel: Palæontology.

Ladoo: Non-metallic Minerals and Deposits.

Hobbs: Earth's Revolution and Facial Expression.

Rosenbusch & Iddings: Physiography of Rock-forming Minerals.

Memoirs of the Geological Survey of India.

Gregory and Bartlett—Stratigraphy.

Bowen's Evolution of Igneous Rocks.

Harker's Metamorphism.

Tyrell's Text-book of Petrology.

SYLLABUS *re* A SPECIAL SUBJECT UNDER BRANCH VI
—GEOLOGY—FOR THE B.Sc. (HONS.) DEGREE
EXAMINATION.

Geology (Main).

Special Subject.

SYLLABUS

Note.—Any one of the following to be selected as a special subject.

- (1) ARCHÆAN AND PRE-CAMBRIAN GEOLOGY—WITH
SPECIAL REFERENCE TO INDIA.

General characteristics of the Archæans—Bearing of the
Archæan rocks on the problem of the origin of the earth—

Distribution of the Archæan rocks on the Earth's surface and its significance—The Archæan rocks of India, their constitution, mode of origin and classification—Comparison with the Archæans of other countries—The importance of the Dharwar system—Igneous rocks of the Archæan period and their relation to problems of petrogenesis.

Structural and stratigraphical relationships of the Pre-cambrians to the foregoing Archæans. Distribution and development of the Pre-cambrian rocks of India, their constitution and classification with special reference to contemporaneous igneous activity. Comparison of the Pre-cambrian rocks of India with the Proterozoic of the Lake Superior region—Life during the Proterozoic era.

Duration of time represented by the Archæan and Pre-cambrian rocks—Economic value of the Archæan and Pre-cambrian rocks.

(2) ECONOMIC GEOLOGY OF INDIA.

This subject shall be studied under the following heads and with special reference, as far as possible, to deposits occurring in Southern India:—

(1) Metalliferous deposits like those of gold, iron, copper, manganese, aluminium, tin, chromium, lead, zinc, and silver.

(2) Economic minerals like mica, magnesite, asbestos, graphite, salt, etc.

(3) Coal and Petroleum.

(4) Precious and semi-precious stones.

(5) The rare minerals.

(6) Clays, limestones and building stones.

Under the headings 1-3 the principles governing the formation of the various types of mineral deposits, their occurrence and distribution, and their relation to the structure of the enclosing rock masses shall be studied. The candidates will also be expected to be familiar with such aspects of economic Geology such as prospecting, sampling and ore valuation, methods of determination of the probable extent and value of the workable deposits, etc.

(3) PALAEOLOGY AND EVOLUTION.

The idea of Evolution—Significance of the facts of palæontology in a study of evolution. The different theories of evolution like Darwinism, Lamarckism, Mutation, Orthogenesis, etc., and their discussion in the light of palæontological studies.—An examination of the theory of recapitulation.—A study of the characters from time to time of the various groups of invertebrates and vertebrates so as to bring out the main trend lines of evolution.—Extinct plants and problems of evolution.

Branch VII—Physiology (Main).

**Syllabus.*

The syllabus shall be the same as for B.Sc. Pass—Physiology (Main)—but candidates shall be required to show a more comprehensive knowledge of the subject than required for B.Sc. (Pass) and shall be required to have made a special study of one of the following branches of the subject:—

1. Blood and circulation.
2. Respiration.
3. Nutrition.
4. Neurology.
5. The sense organs.
6. Endocrinology.
7. Comparative Physiology.

Each candidate shall give notice, through the college, a year before the date of the examination, of the special branch of the subject he proposes to present.

Practical Biochemistry:—In addition to the syllabus laid down for the B.Sc. (Pass) in Physiology (Main), the following:—

Determination of the hydrogen-ion concentration (a) potentiometrically, and (b) by indicators. Determination of the iso-electric point of casein. Estimation of sugars polarimetrically. Preparation of typical amino-acids, *e.g.*, glycine, cystine, tyrosine and of creatine, cholesterol and glycogen, from natural sources. Analysis of milk. Estimation of sugar and urea in blood. Estimation of amino-acids by Van Slyke's method. Spectroscopic examination of blood.

Practical Histology:—The syllabus will, in addition to what is laid down for the B.Sc. (pass), include—

Preparation of Paraffin sections, special methods of staining and identification of microscopic specimens prepared and stained by special methods.

Experimental Physiology:—The syllabus will, in addition to what is laid down for the B.Sc. (pass), include—

Demonstration of electrical changes in skeletal muscle and heart, perfusion of isolated mammalian heart, record of blood pressure in animals.

*The Syllabus for Physiology, Main and Subsidiary, will take effect from the academic year 1937-38.

The following books are recommended in addition to the books recommended for the B.Sc. (Pass)—Physiology (Main):—

Books for study:—

1. Bayliss: Principles of General Physiology (Longmans).
2. Evans: Recent advances in Physiology (Churchill).
3. Pryde: Recent Advances in Biochemistry (Churchill).
4. Mathews: Physiological Chemistry (William Wood, New York).
5. Wishart: Groundwork of Bio Physics (Bell).
6. Maximow and Bloom: Text-book of Histology (Saunders).
7. Cameron: Recent Advances in Endocrinology (Churchill).
8. Cushny: The Secretion of Urine (Longmans).
9. Haldane: Respiration (Yale Univ.).
10. Barcroft: The Respiratory function of the Blood, I—Lessons from High Altitude, II—Haemoglobin, (Camb. Univ. Press).
11. Bainbridge: The Physiology of Muscular exercise (Longmans).
12. Creed, Denny, Brown, Eccles, Liddell and Sherrington: Reflex activity of the spinal cord (Oxford Univ. Press).
13. Lusk: Science of Nutrition (Saunders).

Books for reference:—

1. Luciani: Human Physiology (Macmillan).

Vol. 1. Circulation of respiration.

2. Internal secretion, Digestion, Excretion. The Skin.

3. Muscular and Nervous systems.

4. The sense organs.

5. Metabolism, Temperature, Reproduction, etc.

2. Fulton: Muscular contraction and the reflex control of movement (Bailliere, Tindall & Cox).

3. Foster: History of Physiology (Camb. University. Press).

4. Du Bois, E. F. : Basal Metabolism in Health and disease (Bailliere, Tindall & Cox).

5. Thomas Lewis: The Blood vessels of the Human skin and their responses (Shaw & Sons).

6. Krogh: The Anatomy and Physiology of the Capillaries (Yale).
7. Eric Ponder: Essentials of General Physiology (Longmans).
8. Robson: Recent Advances in Sex and Reproductive Physiology (Churchill).
9. Grollman: The Cardiac output of man in Health and Disease (Thomas, Baltimore).
10. Wiggers: The pressure pulses in the cardio-vascular system (Longmans).
11. Cannon: Bodily Changes in Pain, Hunger, Fear and Rage. (Appleton).
12. Bayliss: The Vaso-motor system (Longmans).
13. Kuntz: The Autonomic Nervous system (Bailliere, Tindall & Cox).
14. Liddell and Sherrington: Mammalian Physiology (Ox. Univ. Press).
15. Parkes: The Internal Secretions of the Ovary (Longmans).
16. Bayliss: Enzymic Action (Longmans).
17. Hawk: Practical Physiological Chemistry (Churchill).
18. Lee: The Microtometist's Vade-Mecum (Churchill).
19. Guyer: Animal Micrology (Chicago Univ. Press).
20. Carleton: Histological Technique (Ox. Univ. Press).

References for special subjects.

Blood.

1. Eric Ponder: The erythrocytes and the action of simple Haemolysins (Oliver and Boyd).
2. Piney: Recent Advances in Haematology.
3. Henderson: Blood (Yale).

Nutrition.

1. Hutchison: Food and the Principles of Dietetics (Arnold).
2. Macleod: Carbohydrate Metabolism and Insulin (Longmans).
3. Browning: The Vitamins.
4. Cathcart: The Physiology of Protein Metabolism (Longmans).
5. McCallum and Simmonds: The newer knowledge of Nutrition (Macmillan).

Neurology.

1. Gaskell: The involuntary nervous system (Longmans).
2. Tilney and Riley: The form and the functions of the Central Nervous system (Lewis).
3. Brain and Strauss: Recent advances in Neurology (Churchill).
4. Adrian: The basis of sensation (Norton & Co.).
5. Adrian. The Mechanism of Nervous Action (Pennsylvania Univ.).
6. Hill: Chemical wave transmission in Nerve (Macmillan).
7. Pavlov: Conditioned Reflexes (Oxford Univ. Press).
8. Ranson: The anatomy of the Nervous system (Saunders).

Endocrinology.

1. Dodds and Dickens: The Chemical and Physiological properties of the internal secretions (Oxford Univ.).
2. Harrington: Thyroid gland, its Chemistry and Physiology (O.U.P.).
3. Cushing. The Pituitary body, hypothalamus, and para-sympathetic Nervous system (Thomas—Illinois).
4. Allen: Sex and Internal secretions (Williams and Wilkins).
5. Sharpey-Schafer: The Endocrine organs, Parts I and II (Longmans).
6. Swale Vincent: Internal secretions and the ductless glands (Arnold).
7. Cramer: Fever, Heat, regulation, Climate and the Thyroid Adrenal Apparatus.

Sense Organs.

1. Adler: Clinical Physiology of the Eye (Macmillan).
2. Hecht: The Retinal processes concerned with visual acuity and colour vision (Harvard Univ. Press).
3. Parsons: Introduction to colour vision (Cambridge).
4. Fletcher: Speech and hearing (London).
5. Wilkinson and Grey: The mechanism of the Cochlea (London).
6. Camis: The Physiology of the Vestibular apparatus (Oxford).
7. Beatty: Hearing in Man and in animals (Bell).
8. Parker, G. H.: Smell, Taste and the allied senses in the Vertebrate (Philadelphia and London).

Comparative Physiology.

1. Woodger: Elementary Comparative Morphology and Physiology (O.U.P.).
2. Ritchie: The Comparative Physiology of the Muscular tissue (Camb. Univ. Press).
3. Hogben and Winten: An introduction to comparative Physiology (Collins).
4. Hogben: Comparative Physiology (Sidgwick & Jackson).
5. Clark: Comparative Physiology of the Heart (Cambridge).
6. De Beer: The comparative Anatomy, Histology and Development of the Pituitary body (Oliver & Boyd).
7. Hogben: Comparative Physiology of Internal Secretions (Camb. Univ. Press).

Journals.

1. Journal of Physiology.
2. American Journal of Physiology.
3. Physiological Abstracts.
4. Physiological Reviews.
5. Quarterly Journal of Experimental Physiology.
6. Journal of general Physiology.
7. Journal of Nutrition.
8. Journal of Endocrinology.
9. Biochemical Journal.
10. Journal of Biological Chemistry.
11. Brain.

Syllabus in Physiology (Subsidiary).*

The same as for B.Sc. (Pass) (Subsidiary), (*Vide* page 604).

*The Syllabus will take effect from the academic year 1937-38.

Text-books for the Examinations.**PART I—ENGLISH.****1938.**

The same as for B.A. (Hons.) Preliminary, 1938, viz.—

Prose.*—**Detailed Study.*—**

Stevenson: Selections—Ed. S. G. Dunn (Longmans).

Treble: Modern Literary Essays (University of London Press).

***Non-detailed Study.*—**

Thackeray: The Newcomes.

Burke by John Morley—Men of Letters Series (Macmillan).

Tagore: Lectures and other Addresses (Macmillan).

1939.

The same as for B.A. (Hons.) Preliminary, 1939, viz.—

Prose.*—**Detailed Study.*—**

Landor: Selections—Ed. Welby (O.U.P.).

Treble: Literary Essays (University of London Press).

***Non-detailed Study.*—**

Disraeli: Sybil.

Galsworthy: Short Stories (Longmans).

Sarma: A Book of Indian Culture (Macmillan).

1940.

(Will be prescribed later).

APPENDIX VII. EXAMINATIONS IN LAW.

Note 1.—No special text-books in the case of Acts of the Indian Legislature are prescribed, but students will be expected to have a mastery of the matter which is usually contained in the best commentaries as well as a knowledge of the bare text of the Act.

2. Text-books have been prescribed where necessary with a view to indicating the general scope of each subject, but questions will not be confined to the books prescribed.

First Examination in Law.

1. *Jurisprudence*:—

1. Salmond: *Jurisprudence*.
2. Maine's *Ancient Law*, Ed. Pollock.

2. *Roman Law*:—

1. Moyle's *Translation of Justinian*.
2. Leage: *Roman Private Law*,

or

Buckland: *Elements of Roman Law*.

3. *Contracts*:—

1. Anson's *Law of Contracts*.
2. Pollock and Mulla—*Indian Contract Act*.
3. T. S. Venkatesa Ayyar: *Law of Contracts*.

4. *Torts*:—

1. Pollock on *Torts*.
2. Salmond's *Law of Torts*.
3. *The Law of Torts* by S. Ramaswami Ayyar.

5. *Indian Constitutional Law*:—

1. Ilbert: *Government of India*.
2. Cowell: *Courts and Legislative Authorities in India*.
3. Trevelyan: *Civil Courts of British India*.
4. *Government of India Act of 1919 and Rules made there under*.

B.L. Degree Examination.

1. *Property*:—

Williams: *Real Property*.
Strahan: *Equity*.

2. *Hindu Law*:—

Mayne's *Hindu Law and Usage*.

3. *Muhammadian Law*:—

Mulla's *Muhammadian Law*

4. Criminal Law:—

Kenny: Outlines of Criminal Law—Indian Penal Code.

Note.—The candidates need study only the portion relating to the general principles and they may omit the special portions of the book.

5. Evidence:—

Willis on Evidence.

The Indian Evidence Act

6. Land Tenures:—

Soundararaj Iyengar: Indian Land Tenures.

M.L. Degree Examination.

BRANCH I—JURISPRUDENCE.

1. General Jurisprudence:—

Austin: Lectures on Jurisprudence.

Jethro Brown: The Austinian Theory of Law.

Allen: Law in the Making.

Gray: Nature and Sources of Law.

Holland: Jurisprudence.

Korkunov: Theory of Law.

Laski: Foundations of Sovereignty and other Essays.

Willoughby: Fundamental Concepts of Public Law.

Rattigan: Science of Jurisprudence.

Duguit: Law in the Modern State.

Laski: Grammar of Politics.

Pound: Introduction to the Philosophy of Law.

2. Comparative Jurisprudence:—

Miraglia: Comparative Legal Philosophy.

Fouillé: Modern French Legal Philosophy.

Dillon: The Laws and Jurisprudence of England and America.

Sherman: Roman Law in the Modern World.

Mackenzie: Studies in Roman Law with comparative views of the Laws of France, England and Scotland.

Smith: General view of European Legal History and other Essays.

Montesquieu: The Spirit of Laws.

Bryce: Studies in History and Jurisprudence—Vol. II.

Burge's Colonial Laws.

Macdonald: Islamic Jurisprudence.

A General Survey of Events, Sources, etc.—Continental Legal History Series.

Pound: Interpretation of Legal History.

3. *History of the Common Law of England:—*

Pollock: The Expansion of the Common Law.

Pollock: The Genius of the Common Law.

Carter: English Legal Institutions.

Jenks: History of English Law.

Holdsworth: History of English Law.

Pound: Readings in the History of the Common Law.

Pollock & Maitland: History of English Law.

Holmes: Common Law.

Stephen: History of the Criminal Law.

Anglo-American Essays on Legal History.

4. *History of Equity and Equity Jurisprudence:—*

Story: Equity Jurisprudence.

Maitland: Equity.

Snell: Equity.

Bretts: Leading Cases.

White & Tudor: Leading Cases.

Buckland: Equity and Roman Law.

5. *Legislation:—*

Bentham: Theory of Legislation.

**Brown: Underlying Principles of Modern Legislation.
(Latest Edition).**

Dicey: Law and Public Opinion.

Ilbert: Legislative Methods and Forms.

Maxwell or Craies: Interpretation of Statutes.

Beal: Rules of Interpretation.

6. *One of the following:—*

(1) *Roman Law:—*

Sanders: Institutes of Justinian.

Moyle: Institutes of Justinian.

Poste: Gaius.

Sohm: Roman Law.

Muirhead: Historical Introduction to Roman Law.

Brun: Fontes Juris Romani.

N.B.—A knowledge of the Latin text is necessary.

(11) Continental Civil Law:—

Brissaud: French Private Law.

Cachard: French Civil Code.

Schuster: Principles of German Civil Law.

Wang: The German Civil Code.

(iii) *Ancient Law and Custom:—*

Vinogradoff: Historical Jurisprudence.

Allen: Law in the Making.

Sadler: Relation of Custom to Law.

Maine: Ancient Law.

Early Law and Custom.

Early Institutions.

Lowie: Primitive Society.

Malinowski: Crime and custom in Primitive Society.

Kocourek & Wigmore: Sources and Ancient and Primitive Law.

Primitive and Ancient Legal Institution.

Wigmore: The Panorama of Law.

BRANCH II—CONSTITUTIONAL LAW.

1. Constitutional Law of England:—

Willoughby: The Fundamental Concepts of Public Law.

Amos: The English Constitution edited by Lord C. J. Hewart.

Dicey: Introduction to the Law of the Constitution.

Anson: Law and Custom of the Constitution.

Ridges: Constitutional Law of England.

Emden: Principles of British Constitutional Law.

Bicknell: Cases on the Law of the Constitution.

Forsyth: Cases and Opinions on Constitutional Law.

Thomas & Bellot: Leading Cases on Constitutional Law.

Keir and Lawson:—Cases on Constitutional Law.

Goodnow: Comparative Administrative Law.

Comer: Legislative Functions of National Administrative Authorities.

Goodnow: Cases on American Administrative Law.

Robson: Justice and Administrative Law.

Hewart (Lord, C. J.): 'The New Despotism.'

Ghosh: Comparative Administrative Law.

2. Indian Constitutional Law:—

Ilbert: *The Government of India.*

Ilbert & Meston: *The New Constitution of India.*

Rangaswami Ayyangar: *The Indian Constitution.*

Trevelyan: *Constitution and Jurisdiction of Courts of Civil Justice in British India.*

Cowell: *Courts and Legislative Authorities in India.*

Mukherjee: *Indian Constitutional Documents.*

Mukherjee: *Indian Constitution.*

Eggar: *The Laws of India and the Government of India.*

The Indian Statutory Commission Report—Vol. I.

Ghosh: *Comparative Administrative Law.*

The Government of India Act of 1919 and Rules made thereunder.

3. Constitutional Law of the British Dominions and other Countries:—

Jenks: *The Government of the British Empire.*

Keith: *Responsible Government in the Dominions.*

Keith: *Imperial Unity and the Dominions.*

Keith: *Constitutions and Governments of the Empire.*

Todd: *Parliamentary Government.*

Brand: *Union of South Africa.*

Lefroy: *Constitutional Law of Canada.*

Moore: *Commonwealth of Australia.*

Brunet: *The German Constitution.*

Story: *Commentaries on the Constitution of the U.S.A.*

Evans: *Leading Cases on American Constitutional Law.*

Minty: *Constitutional Laws of the British Empire.*

Duncan Hall: *The British Commonwealth of Nations.*

Hurst: *Great Britain and the Dominions.*

Keith: *The Sovereignty of the British Dominions.*

4. Public Authorities, Corporations and Officers:—

Charter: Law relating to Public Officers.

Moore: Act of State in English Law.

Robertson: Civil Proceedings by and against the Crown.

Robinson: Public Authorities and Legal Liability.

5. Law of Elections:—

Rogers: Elections.

Hammond: The Indian Candidate and the Returning Officer.

Vinayaka Rao: Law and Practice of Elections.

Hammond: Reports of Indian Election Cases—1922, 1925,
1929.

6. British India and the Indian States (with special reference to Treaties):—

Aitchison: Treaties, Sanads and Engagements.

Lee Warner: Native States of India.

Tupper: The Indian Protectorate.

Panikkar: Relations between the Indian States and the
Government of India.

Report of the Butler Committee.

The Crown and the Indian States. (P. S. King & Co.).

BRANCH III—INTERNATIONAL LAW.

1. Public International Law:—

Hall: International Law.

Lawrence: Principles of International Law.

Holland: International Law.

Oppenheim: International Law.

Westlake: International Law.

Smith: International Law.

Lawrence: Documents illustrative of International Law

Pitt-Cobbett: Leading Cases on International Law.

Scott: Cases on International Law.

Bentwich: Cases and Statutes on International Law.

British Year Book of International Law.

Vattel: Law of Nations.

Grotius: Law of Peace and War.

J. B. Moore: Digest of International Law.

Alvarez: International Law from the American Stand-point,
1922

Annual Digest of International Law Cases, 1925, 1926, 1927
and 1928

2. *Private International Law*:—

Westlake: Private International Law.

Dacey: Conflict of Laws.

Foot: Private International Jurisprudence.

**Cheng: Rules of Private International Law determining
capacity to contract.**

Beal: Cases on the Conflict of Laws.

3. *History of International Law*:—

Walker: A History of the Law of Nations.

**Phillipson: International Law and Custom of Ancient
Greece and Rome.**

Visvanatha: International Law in Ancient India.

Phillimore: Three Centuries of Treatise of Peace.

Garner: International Law and the World War.

Garner: Recent Developments in International Law.

**Nippold: The Developments of International Law after the
World War.**

Richard: Progress of International Law and Arbitration.

Marvin: Evolution of World Peace.

Perris: Short History of War and Peace.

Vattel: The Law of Nations.

Grotius: The Law of War and Peace.

4. *Prize Law*:—

**Barclay: Handbook of the Law and Usage of War and Prize
Law**

Tiverton: Principles and Practice of Prize Law.

Loreburn: Capture at Sea.

Roscoe: English Prize Cases.

Garner: Prize Law during the World War.

Grant: British and Colonial Prize Laws.

Colombos: Law of Prize.

Hull: Digest of cases decided in British Prize Courts
(1914-27).

5. One of the following as a Special Subject:—

(a) *Outlines of the History of Diplomacy and Diplomatic Practice:—*

Hill: A History of Diplomacy in the International Development of Europe.

Heatly: Diplomacy and the study of International Relations.

Gooch: Recent Revelations of European Diplomacy.

Satow: A Guide to Diplomatic Practice.

Warden: Origin, Nature and Progress of Establishments.

Barclay: Problems of Diplomacy.

Borchard: Diplomatic Protection of Citizens Abroad.

Diplomatic Memoirs and Correspondence of Statesmen and Ambassadors, e.g., Bismarck, Metternich, House, etc.

N.B.—A knowledge of French should be required of the student who takes this special subject.

(b) *League of Nations:—*

Woolf: International Government.

D. J. Hill: The Modern State and International Organisation.

Pollock: League of Nations.

Butler: League of Nations.

Epstein: The League of Nations—A Survey of the past ten years.

Oppenheim: The League of Nations and Its Problems.

Fachiri: The Permanent Court of International Justice, its Constitution, Procedure and Work.

Hudson: The Permanent Court of International Justice.

Morris: International Arbitration and Procedure.

Year Books of the League of Nations.

Barnes: History of the International Labour Office.

Baker: *The League of Nations at work.*

Wheeler-Bennet: *Information on the Permanent Court of International Justice with Supplements, 1925, 1926, etc.*

Rappard: *International Relations as viewed from Geneva,*
1925.

Official Journal of the League of Nations from 1922 onwards.

Ralston: *Law and Procedure of International Tribunals.*

Problems of Peace by various Writers—2 series.

(c) *International Law in the Far East:—*

Lawrence: *War and Neutrality in the Far East.*

Latifi: *Effects of War on Property.*

Washington Conference Papers: *Volume III—The Pacific and the Far East.*

Takahashi: *International Law during the Chino-Japanese War 1890.*

Lindley: *The Acquisition and Government of Territories in International Law.*

Piggot: *Exterritoriality.*

Smith & Sibley: *International Law during the Russo-Japanese War.*

Takahashi: *International Law applied to the Russo-Japanese War.*

BRANCH IV—TORTS AND CRIMES.

1. *Theory of Crimes and Punishments including Criminology:—*

Beccaria: *Crime and Punishment.*

Gillin: *Criminology and Penology.*

Sutherland: *Criminology.*

Parmelee: *Criminology.*

De Quiros: *Modern Theories of Criminality.*

Subrahmanya Pillai: *Principles of Criminology.*

2. *Law of Crimes and Criminal Procedure in India:—*

Statute Law on the subject.

3. *History of Criminal Law and Procedure in England.*

Pollock & Maitland: *History of English Law.*

Stephen: *History of the Criminal Law.*

Kenny: Outlines of Criminal Law.

Holdsworth: History of English Law.

4. *Comparative Criminal Jurisprudence including Procedure:—*

Penal Codes of Germany, France and Japan.

Callender: American Courts, (Chapters on Criminal Courts).

Du Boys: History of Criminal Law in France, etc.

5. *Law of Torts and its History:—*

Clerk & Lindsell on Torts.

Street—Foundation of Legal Liability—Vols. I & III.

Holdsworth: History of English Law.

The Law of Torts by S. Ramaswami Ayyar.

6. *Negligence and Nuisance and Libel and Slander:—*

Beven: Negligence.

Garrett: Law of Nuisance.

Odgers: Libel and Slander.

BRANCH V—LAW OF OBLIGATIONS.

(Contracts and Torts).

1. *Law of Contracts and its History:—*

Leake on Contracts.

Pollock on Contracts.

Salmond on Contracts.

Anson on Contracts.

Street—Foundation of Legal Liability.

Holdsworth: History of English Law.

2. *Law of Torts and its History:—*

Clerk & Lindsell—Torts.

Pollock—Torts.

Salmond—Torts.

Street—Foundation of Legal Liability.

Holdsworth: History of English Law.

The Law of Torts by S. Ramaswami Ayyar.

3. *Remedies—Specific Performance, Injunctions and Damages.*

Collett—Specific Relief.

Bannerjee—Specific Performance.

Kerr on Injunctions.

Mayne—Damages.

Snell—Principles of Equity.

Fry—Specific Performance.

4, 5 & 6. *Any three of the following:—*

(a) *Negotiable Instruments:—*

Byles on Bills.

Chalmers—Negotiable Instruments.

Bhashyam & Adiga—Negotiable Instruments.

(b) *Sale of Goods and Bailments and Carriers:—*

Benjamin—Sale.

Blackburn—Sale.

Chalmers—Sale of Goods.

Beal on Bailments.

Story—Bailments.

Disney—Carriers.

Macnamara—Carriers.

Carver—Carriage by Sea.

Indian Railways Act.

(c) *Agency and Partnership:—*

Story: Agency.

Bowstead on Agency.

Lindley: Partnership.

Singhal: Partnership.

(d) *Domestic Relations, Husband and Wife, Parent and Child,*

Master and Servant:—

Eversley: Domestic Relations,

Guardian & Wards Act.

Smith: Master and Servant.

Workmen's Compensation Act. (English and Indian).

(e) *Negligence, Nuisance, Libel and Slander*:—

Beven: Negligence.

Garrett: Nuisance.

Gatley: Libel and Slander.

BRANCH VI—MERCANTILE LAW.

1. *Company Law*:—

The Indian Companies Act and the English Law on the subject.

Buckland: Companies Act.

Lindley on Companies.

Palmer on Companies.

2. *Any one of the following*:—

(a) *Bankruptcy*:—

The Indian Insolvency Acts.

Williams on Bankruptcy.

(b) *Patents, Copyrights, and Trade Marks*:—

Sen: Law of Monopolies in British India (Tagore Law Lectures).

Copinger: Law of Copyright.

Kerley: Trade Marks and Trade Names (1927).

Terrell on Patents.

(c) *Insurance—Life, Fire and Marine*:—

Chalmers: Marine Insurance.

Bunyon: Fire Insurance.

Bunyon: Life Insurance.

Arnold on Insurance.

Porter on Insurance.

3. *Banking including Negotiable Instruments*:—

Tannan: Banking Law and Practice in India.

Jacobs: Bills of Exchange.

The Indian Negotiable Instruments Act.

Grant: Banks and Banking.

4. *Sale of Goods*:—

Statute Law, English and Indian.
Benjamin on Sales.

5. *Agency and Partnership*:—

Story: Agency.

Story: Partnership.

The Sections in the Indian Contract Act with a Comparative Study of English Law on the subject.

Lindley: Partnership.

Bowstead: Agency.

6. *Maritime Law*:—

Scrutton: Charter Parties.

Carver: Carriage by Sea.

Marsden: Law of Collisions (1934 Ed.).

BRANCH VII—PERSONAL LAWS.

(No lists of books are necessary to indicate the scope of examination in this group which will be of a very advanced character. A knowledge of the original sources and texts of Hindu Law will be required).

BRANCH VIII—TRANSFER OF PROPERTY.

1. *Law of Transfer of Property in England and India*:—

Hood & Challis: Conveyancy Acts.

The Indian Act with a Comparative Study of English Law on the subject.

Carson: Real Property Statutes.

2. *Vendors and Purchasers and Mortgages*:—

Dart on Vendors and Purchasers.

Williams on Vendors and Purchasers.

Seaborne on Vendors and Purchasers.

Coote on Mortgages.

Ghose on Mortgages in India.

Fisher on Mortgages.

3. *Wills, Succession and Bankruptcy:—*

Jarman on Wills.

Theobald on Wills.

The Indian Acts on the subject.

Henderson: Intestate and Testamentary Succession in India.

Williams: Bankruptcy.

4. *Compulsory and Judicial Sales.*

Macnamara: Void and Judicial Sales.

Dutt: Compulsory Sales in British India.

Civil Procedure Code: Execution Sales.

The Land Acquisition Act.

5. *Law of Private Trusts:—*

Lewin: Trusts.

The Trusts Act.

Godefro: Trusts and Trustees.

Story: Equity Jurisprudence.

6. *Public Trusts and Charities:—*

Ganapathi Ayyar: Hindu and Muhammadan Endowments.

The Acts on the subject.

BRANCH IX—REAL AND PERSONAL PROPERTY.

1. *Real Property:—*

Williams: Real Property.

Goodeve: Real Property.

Digby: History of Real Property.

Holdsworth: History of English Law.

2. *Personal Property:—*

William: Personal Property.

3. *Highways including Foreshore and Seashore:—*

Pratt: Highways.

4. *Easements*:—

The Indian Acts on the subject.

Peacock on Easements.

Gale on Easements.

Goddard: Easements.

Coulson: Law of Waters.

Gould on Waters.

Kinny on Irrigation.

5. *Land Tenures in India—Customary*:—

Baden Powell: Land Systems.

Soundararajengar: Land Tenures.

Guha: Land Systems of Bengal and Bihar.

6. *Land Tenures in India—Statute-Law*:—

The Estates Land Act.

The Bengal Tenancy Act.

APPENDIX VIII.

Syllabuses for courses of Study in Medicine.

Syllabus in Inorganic Chemistry for the Pre-Registration Examination.

Candidates will be expected to understand the elements of Chemistry included in the syllabus for the Chemistry part of the Intermediate Examination, and in addition to have an elementary knowledge of the following subjects:—

The general properties of solids, liquids and gases.

The gas laws and the kinetic theory of gases.

The general properties of solutions, including osmotic pressure and the methods of measuring it, both direct and indirect.

Electrolysis and the theory of ionic dissociation, including the theory of hydrogen-ion concentration and its measurement.

The law of mass action and its application to chemical equilibria.

Colloids, including the effect of surface on chemical actions.

Catalysis and the general conditions of catalytic actions.

Some elementary ideas on the constitution of matter, the classification of the elements; and radioactivity.

Practical Examination.

Candidates will be expected—

to be familiar with the ordinary materials and apparatus used in laboratories, and with such operations as filtration, solution, distillation, drying, precipitation, crystallisation, and extraction with immiscible solvents;

to be familiar with the use of a chemical balance and the use and calibration of graduated flasks, pipettes and burettes;

to prepare simple inorganic substances;

to purify or to make an intelligent attempt to purify a known substance;

to perform simple quantitative exercises, such as the determination of melting points, boiling points, densities, and the

determination of the amount of water in a substance or of the amount of ash left on the ignition of a substance;

to perform any easy gravimetric estimation, for example, a sulphate as BaSO_4 , carbon dioxide by direct weighing, chloride-ion as AgCl , calcium as CaO ;

to prepare and use in simple volumetric estimation standard solutions of acids, alkalis, permanganate, iodine, thiosulphate and silver nitrate;

to determine the approximate hydrogen-ion concentration of a given solution by means of indicators;

to attack with intelligence any simple chemical problem, such, for example, as the separation of two known substances and the preparation of a standard solution of a substance that cannot be weighed.

The Examiners will use their discretion as to whether or not books may be allowed for the whole or part of the practical examination.

Syllabus in Physics for Pre-Registration Examination.

The whole syllabus is to be treated in an elementary manner and with reference to the subsequent work of the student. The treatment will be mostly experimental and in no case will mathematics be required beyond elementary algebra and geometry.

General Physics:—Units and measurements of length, mass and time; and the derived units and measurements of velocity, acceleration, force, work and energy, power and efficiency. The laws of motion and conditions of equilibrium of bodies under the action of forces. Simple machine. Uniform circular motion and the centrifuge.

The elements of hydrostatics including methods for the determination of densities. Elementary principles governing the flow of liquids in rigid and elastic tubes. Viscosity and surface tension and their measurements.

Gas laws including the diffusion of gases and elementary ideas of the kinetic theory of matter.

Heat:—The effect of heat on bodies including thermometry, dilatation, change of state and calorimetry. Convection, conduction and radiation of heat. The relation between heat and work.

Sound:—The production, propagation and reception of sound waves. The measurement of velocity, frequency and wave length of sound.

Light:—Outlines of the wave theory of light including interference, diffraction, double refraction and polarization of light. Simple geometrical optics, including reflection and refraction at plane and curved surfaces. The range of electromagnetic waves and various kinds of spectra. Optical instruments including the spectrometer, the photographic camera, the eye as an optical instrument, the microscope and the polarimeter.

Electricity and Magnetism:—The elementary facts and phenomena of magnetism and static electricity.

The production of electric currents and the chemical, magnetic and heating effects of them. Units and measurements of current strength, potential difference and resistance. Thermo-electric couples.

Electro magnetic induction, and Ruhmkorf's coil, electric discharge in rarefied gases, Cathode and X-Rays.

Syllabus in Practical Physics.

Practical Physics:—Students are expected to have a practical knowledge of the following subjects:

General:—The use of graphs and diagrams.

Elementary mensuration and mechanics.

The use of a delicate balance, thermometers and the barometer.

The use of the vernier, the screw-gauge and the spherometer,

The determination of densities of solids, liquids and gases.

The use of the falling plate. Fletcher's trolley or Atwood's machine to determine g and n .

The simple pendulum.

The determination of surface tension by (a) the rise in a capillary tube, (b) the surface tension balance.

The comparison of viscosities of liquids.

Heat:—The determination of melting and boiling points.

The determination of the coefficients of expansion of solids, liquids and gases.

The determination of specific and latent heats by the method of mixtures and of specific heats by the method of cooling.

The determination of the mechanical equivalent of heat.

The use of hygrometers.

Sound:—The use of the sonometer and resonating columns of gases.

Light:—The use of Photometers.

The determination of focal lengths of spherical mirrors, thin lenses and combinations of thin lenses.

The determination of the wave length of light by a diffraction grating.

The use of the polarimeter, spectrometer and the microscope.

Electricity:—The use of electric batteries.

Mapping magnetic fields.

The experimental proof of the Laws of Electrolysis.

The measurement of resistance by the metre bridge and Post Office Box.

The comparison of E.M.F.'s by (1) Tangent Galvanometer, (2) the Potentiometer.

The use of the electrical calorimeter.

The measurement of the conductivity of an electrolyte.

The use of a Thermo-couple.

BIOLOGY.

REVISED SYLLABUS FOR COURSE OF STUDY IN BIOLOGY FOR THE PRE-REGISTRATION EXAMINATION.

The examination in *Biology* shall comprise the subjects included in the following syllabus, which is intended only to indicate its general scope and character:—

A. *General Biology*.—

The distinctive properties of living and non-living matter.

The differences between animals and plants.

The nature and properties of protoplasm.

The structure of the cell; cell division and gametogenesis.

Conjugation and fertilization.

Segmentation and formation of germ layers.

Structure and function of animal tissues.

B. Botany.

The structure, life-history, and physiology of Yeast, Bacteria, Mucor, Penicillium, Spirogyra, Chara, fern.

The elements of the morphology and physiology of the Angiosperms embracing (a) the structure (macroscopic and microscopic) of the root, stem and leaf; (b) the structure of a typical flower and modifications of the type; (c) the inflorescence, and the principal types of branching; (d) the structure and development of the seeds and embryo; (e) the principal types of fruits; (f) the dispersal of seeds and fruits; (g) the main facts in relation to nutrition, growth and reaction to environment.

The reproduction and life-history of Angiosperms.

C. Zoology.—

The structure, life-history and physiology of Amœba, Paramœcium, Euglena, Hydra, Earthworm, Leech, Cockroach and the anatomy of Frog and Rabbit. (Only an elementary knowledge of the muscular system of the frog, and the muscular and nervous system of the rabbit will be required).

An elementary knowledge of the more important types of animal parasites, protozoan, and metazoan, such as Entamœba, Trypanosoma, Plasmodium, Liver-fluke, Tape-worm, Round-worm, etc.

The leading types of reproduction in animals. The main features of the larval history and metamorphosis of the frog, the embryonic membranes and placenta of the fetus of the rabbit.

The chief external characters and poison apparatus of the poisonous snakes of South India.

D.—

Variation, Heredity, Natural Selection, Evolution treated in an elementary manner.

Practical Examination.

Each candidate must be prepared to examine microscopically, *to dissect and to describe the specimen of parts of the animals and plants enumerated in the foregoing syllabus with the exception that for the skull of the rabbit will be substituted that of the dog.

Syllabus in Organic Chemistry.

The examination in Organic Chemistry shall comprise the following:—

The ultimate analysis of organic compounds, and estimation of carbon, hydrogen, nitrogen, sulphur, phosphorus and the halogens.

The determination of empirical, molecular, and structural formulæ, and of molecular weights of organic substances.

The constitution and most important reactions and relationships of the following groups of compounds, illustrated in each case by a reference to a few of their most important members:—

Aliphatic series.—

Paraffin. Unsaturated hydro-carbons. The different classes of alcohols and their derivatives. Halogen and nitro derivatives of the hydro-carbons. Aldehydes. Ketones. Acids. Sulphonic acids. Simple ethers. Esters. Amines. Phosphines. Arsines. Amino-acids. Amides. Nitriles. Cyanides. Urea.

Aromatic series.—

Benzene. Toluene and their simple derivatives.

Phenols with special reference to phenol, pyrocatechol, resorcinol, and hydroquinol, pyrogallol.

Benzyl alcohol, Benzaldehyde, benzoic acid, salicylic acid, gallic and tannic acids, phthalic acids, phenolphthalein, Glucosides, and Alkaloids.

Practical Examination.

The detection of the following elements:—Carbon, hydrogen, nitrogen, sulphur, phosphorus and the halogens.

Preparation of chloroform and of iodoform from ethyl alcohol and preparation and hydrolysis of an ester and of an amide.

Tests for and reactions of methyl alcohol, ethyl alcohol, glucose, cane sugar, phenol, salicylic acid, formates, acetates, exalates, cyanides, tartrates, citrates, morphine, strychnine; quinine, cinchonine and urea.

The preparation of a fatty acid from a fat. The determination of the molecular weight of a fatty acid by titration.

Candidates will be required to bring to the practical examination note books containing record of their previous practical work. These note books must be certified by the teachers of the candidates as being the actual working notes made by them in the laboratory.

(Examiners will use their discretion as to whether or not the candidates may be allowed books for the whole or part of the practical examination).

PHYSIOLOGY.

Syllabus.

Muscle and Nerve.—

Structure and properties of muscle—effects on contraction of load and fatigue—chemical, thermal and electrical changes in muscle—conduction in nerve—polarisation phenomena in nerve—reaction of degeneration.

Central Nervous System.—

Reflex action in 'Spinal' frog and in man. Structure and functions of the Spinal cord. Spinal mechanism of co-ordinated movements.

Structure and functions of the Brain. Stem. Connections and functions of cranial nerves.

Cerebellum.

Structure and connections of the Cerebrum and its functions. Cerebral localisation.

Autonomic nervous system.

Special senses—

Muller's law of specific irritability of nerves. Weber's law.

Structure of the eye-ball. Light reflex. Mechanism of accommodation. Refraction of the eye. Common optical defects. Use of ophthalmoscope. Perimeter. Retina and its connections. Formation of retinal images. Colour vision and contrast.

Structure of auditory and vestibular apparatus. Auditory sensations. Labyrinthine impressions.

Structure of larynx. Production of voice. Use of Laryngoscope.

Cutaneous sensations. Gustatory and olfactory sensibility.

Digestion.—

Secretion and properties of the digestive juices and bile.

Movements of the stomach and intestines.

Absorption of foodstuffs.

Metabolism.—

Metabolism of proteins, fats and carbohydrates. Glycosuria. Estimation of Metabolism. Nitrogen-balance. Influence of work and starvation on Metabolism. Normal Diet.

Temperature of man and its regulation.

Blood.—

Formed elements, their origin, life history and functions. Haemoglobin and its chemistry, Haemolysis. Coagulation. Reaction of blood. Estimation of volume of blood, corpuscles and Haemoglobin.

Circulation.—

Physiological anatomy of the Heart, and action of valves. The mechanism of heart pump. Causation of heart beat. Properties of cardiac muscle. Factors influencing the activity of cardiac muscle. Output of heart. The nervous regulation of the heart. Heart reflexes. Coronary circulation.

Blood pressure. Velocity of blood. Pulse. Capillary circulation. Vasomotor mechanism. Chemical regulation of blood-flow. Influence of exercise on circulation.

Lymph and its formation. Lympho-gogues. Cerebro-spinal fluid.

Respiration.—

Mechanics of respiratory movements. Chemistry of respiration. Regulation of respiration. Effect of changes in the air breathed. Estimation of total respiratory exchange and of composition of expired and alveolar air.

Excretion.—

Urine, its composition and characters, Secretion of Urine.

Physiology of Micturition.

Skin and skin glands. Their structure and functions.

Eudocrine Organs.—

The Physiology of reproduction.

Secretion and properties of Milk.

HISTOLOGY.

Preparation of specimens of normal tissues, either fresh or previously prepared, so as to demonstrate their minute structure.

Application of the commoner histological methods.

Recognition and description with diagrams, of microscopic preparations of any normal tissue or organ.

PRACTICAL PHYSIOLOGY.

The methods employed for the demonstration of fundamental physiological processes and performing simple experiments.

Theory: Biochemistry Syllabus.

- I. The Chemistry of Food,
 - (a) Inorganic,
 - (b) Organic Chemistry of proteins, fats and carbohydrates.
 - (c) Vitamins.
- II. The Chemistry of Digestion and absorption in Man.
- III. Metabolism—General and special.
- IV. The Chemistry of Respiration and acidosis.
- V. The Chemistry of Blood and Lymph.
- VI. The Chemistry of Urine and faeces.

Practical.—

- Properties and Re-actions of (a) Carbohydrates—Glucose, Levulose, Maltose, Lactose, Cane sugar, Starch, Glycogen and Dextrins.
- (b) Fats—olive oil, oleic acid and palmitic acid, glycerol and cholesterol.
- (c) Proteins—Albumin and Globulin, Metaproteins—Proteoses—Peptones, amino acids and mucin, gelatin, and casein.

Estimation of Carbohydrates, Glucose, Levulose, Maltose, Lactose.

Estimation of amino-acids.

Properties of Digestive Enzymes—Biles—analysis of Gastric contents.

Qualitative tests and properties of Blood and urine.

Quantitative estimation of chlorides, urea, sugar, non-protein-nitrogen, creatinine and uric acid in blood, and chlorides, sulphates, phosphates, urea, sugar, creatinine, ammonia acidity and uric acid in urine.

Estimation of alveolar carbon-di-oxide by Fredericia's method.

SYLLABUS IN PHARMACOLOGY.

The course in Pharmacology consists of lectures, demonstrations in experimental pharmacology and practical pharmacy, the

aim being to impart a general knowledge of the mode of action of drugs treated from an experimental point of view.

The lectures are devoted chiefly to the discussion of the effect of drugs and poisons on the tissues of man and animals and how these effects may be utilised to relieve or cure disease. The total number of lectures should not be less than 35. The general scheme of the lectures is as follows:—

The mode of action of drugs treated from an experimental stand-point.

Pharmacology of the Central Nervous System:—

Alcohol; General anaesthetics; Hypnotics of the methane series; Bromides; Opium and Cannabis indica.

The Caffeine group: Camphor; strychnine.

Peripheral nervous action.—Curare group; nicotine group; Belladonna group; pilocarpine group. Aconite and Veratrine.

Local Anaesthetics:—Cocaine and its substitutes; Hydrocyanic acid.

Pharmacology of the Genito-urinary system.—

Diuretics and urinary antiseptics.

Ergot; Hydrastis.

Gland Secretions.—

Adrenalin; Pituitary extract; Thyroid extract; Parathyroids and Insulin.

Pharmacology of the Circulation.—

Digitalis group.

Pharmacology of the Vessels.—

Vaso-constrictors and Vaso-dilators.

Pharmacology of respiration.—

Stimulants; Depressants; Anti-spasmodics; Expectorants; Saponins; Ipecacuanha; Respiratory disinfectants.

Pharmacology of the Alimentary Canal.—

Bitters; Volatile oils; Purgatives; Astringents; Emetics; Anthelmintics.

Pharmacology of Temperature regulation.—

Anti-pyretics; Salicylates.

Drugs acting on the excretion of Uric Acid.—

Colchicum; Atophan.

Skin irritants and Counter-irritation.

Antiseptics and disinfectants.

Drugs acting on metabolism.—

Phosphorus.

Specific Therapy.—

Cinchona alkaloids; Mercury; Arsenic; Bismuth; and Antimony.

Ion-action and Salt action.

Certain Positive ions.

Hydrates and Carbonates of the Alkalies. Soap.

Certain Negative ions, Acids.

General action of heavy metals.—

Iron; Silver; Zinc; Copper; Lead; Aluminium; Manganese; Chromium; Gold. Radio-active metals.

Ferments. Sweetening agents; Demulcents and Emollients. Vitamins.

Prescription writing; Incompatibility; Synergism; Antagonism.

The physical and chemical properties of the drugs are considered only in so far as they concern their action and the methods of administration. A selection of the more important pharmaceutical preparations is also considered.

Demonstrations in Experimental Pharmacology are used to illustrate the lectures as far as practicable.

Practical Pharmacy: the course to be not less than 20 meetings.

MENTAL DISEASES.

The course of Mental Diseases shall comprise instruction in the following types of Disorder:—

(i) Failure of Mental Development—

Idiocy; Imbecility; Weak-mindedness.

(ii) Mania-Depressive Insanity—

Mania; Melancholia; Stupor; Alternating and Circular conditions,

(iii) Delusional Insanity and Paranoia.

(iv) Dementia—

Primary or Adolescent (D. Præcox); Consecutive or Terminal; Organic; Para-Syphilitic (G.P.I.); Senile.

(v) Insanity due to drugs—

Alcohol; Indian Hemp; Opium and its derivatives; Cocaine; Lead.

(vi) Epileptic Insanity.

(vii) Hysteria and Psychasthenia.

(viii) Exhaustion Psychoses—

Post Febrile Insanity; Acute Delirium; Neurasthenia.

(ix) Epochal Insanities—

Insanity of Puberty and Adolescence; Insanity of the child bearing period; Insanity of Climacteric; Insanity of old age.

(x) Mental Disorder, associated with Physical diseases—

Diseases of the Thyroid Gland; Polioencephalitis; Syphilis; Tubercle, Nephritis, Diabetes and Gout.

(xi) The Medico-Legal and Social relationships of Insanity.

(xii) General Treatment.



APPENDIX IX.

B.S.Sc. DEGREE EXAMINATION.

ENTOMOLOGY AND PARASITOLOGY.

Entomology.—The Structure and Life-history of insects with special reference to Diptera.

The structure, life-history, habits, classification and relation to disease of:—

- (i) The Blood sucking Nematocera and Brachycera, especially, *Culicoides*, *Phlebotomus*, *Simulium*, *Culex*, *Anopheles*, *Stegomyia*, the Leptidae and Tabanidae.
- (ii) The Muscidae, Acalypterae, and Calypterae, especially, *Musca*, *Stomoxys*, *Glossina*, *Hippobosca*, and their allies, *Sarcophaga*.
- (iii) The House fly and other diptera which frequent human dwellings.
- (iv) The myasis-producing flies of man and animals.
- (v) Siphonaptera, Rhyncota, Siphunculina, and Mallophaga.
- (vi) Spiders, ticks and mites.

The poison apparatus of snakes and other venomous animals.

ENTOMOLOGICAL SURVEYS AND INSECT CONTROL.

Protozoology.—An introduction to the Protozoa, Sarcodina, Ciliata, Flagellata, Sporozoa; their relation to disease. **Malaria surveys.**

Helminthology.—The structure, life-history and classification of Nematodes, Cestodes, Trematodes and Hirudinea. The control of helminth infection.

The course shall consist of lectures and practical work in the laboratory and in the field; on the collection and preservation of insects, worms and protozoa; detailed study of the more important insects and worms by means of dissections and other preparations; the breeding of mosquitoes, flies and other insects; entomological surveys and the identification of insects; the detection and identification of the commoner parasites and ova in the blood, urine, faeces of man and animals; demonstrations of macroscopic and microscopic preparations.

BACTERIOLOGY.

The course of lectures shall include the classification, characters and life-history of the pathogenic and the commoner non-pathogenic microbes, fungi and yeasts, more especially those concerned with the causation and spread of endemic and epidemic

diseases and of diseases of animals transmissible to man; the bacteriology of air, water, soil and food; disinfectants, their standardisation and use; immunology and serology; and bacterial vaccines and their use in the diagnosis, prevention and treatment of infectious disease as well as in the identification and classification of bacteria.

The course of laboratory work shall comprise practical training in general laboratory technique, sterilisation, preparation of media, the study in detail of the commoner microbes by aerobic and anaerobic and other methods, the separation of pure cultures and identification, general and special; microscopical and cultural methods used in the bacteriological examination of air, water, soil, sewage and sewage effluents, foods, special attention being paid to the routine methods employed in the diagnosis and prevention of disease; the standardisation of disinfectants and estimating the comparative value of disinfectant processes by their lethal action on microbes; the preparation of bacterial vaccines, the application of serological tests.

Demonstrations of special methods and processes and tests which cannot be conveniently carried out by the class shall be given from time to time.

CLIMATOLOGY AND METEOROLOGY

The elements of climatology as applied to Public Health. Air pressure and its influence on health; barometers, corrections for barometers. Temperature, thermometers and their uses, methods of making observations, maximum and minimum thermometers, solar and terrestrial radiation thermometers, soil thermometer, thermographs, the influence of temperature on health and ventilation. Humidity:—hygrometers, direct and indirect, determination of humidity, the influence of humidity on health and ventilation. Rainfall, rain gauges, the influence of the configuration of a region on the rainfall, the influence of rainfall on health. Winds:—estimation of direction and velocity and pressure, determination of the direction and strength of air currents, prevailing winds, monsoons, cyclone and anticyclone systems, weather charts and weather forecasts.* Atmospheric electricity, thunderstorms.

Special consideration of the meteorological conditions prevailing in the Presidency and in India generally, and their influence on the prevalence and spread of certain epidemic and infectious diseases.

PHYSICS AND CHEMISTRY IN RELATION TO PUBLIC HEALTH

The General principles of Physics as applied in Public Health in heating, cooling, lighting, ventilation, drainage, and filtration. The general principles of Inorganic, Organic, and Physical Chemistry in relation to the methods and processes in common use in Public Health.

The character and composition of air, water, soil, sewage, their impurities and the methods of detection.

The character, composition and adulteration of the more commonly used foods, condiments and beverages.

The characters and composition of the important disinfectants and antiseptics, their modes of action and standardisation. Methods of analysis commonly used in Public Health work, interpretation of results in the framing of opinions and reports.

Laboratory work as shown below:

Water.—Sampling, physical examination, qualitative tests, quantitative determination of the total solid residue, dissolved gases, carbonates, chlorides, sulphates, Nitrites, Nitrates, Organic matter in terms of 'Albuminoid Ammonia', organic Carbon and Nitrogen and as Oxygen absorbed, Ammonia, Phosphates, Lime, Magnesia, Hardness, Poisonous metals. Microscopic examination of the deposit.

Sewage.—Chemical and Physical examination of sewage and effluent after treatment.

Air.—Quantitative estimation of Carbon dioxide, detection of Sulphuretted hydrogen, Nitrous acid and Nitric acid.

Soil.—Determination of size of grain, determination of sand and clay, determination of water capacity, porosity and permeability, determination of Ammonia and Organic Nitrogen in the soil, and of Carbonic acid in the ground air.

Food.—Qualitative and quantitative chemical examination of milk, condensed and preserved milk powders, curds, butter-milk, butter, ghee and other animal fats, edible vegetable oils, cheese, confections and honey preserves, wheat flour and other cereal flours, bread, starch, tea, coffee, cocoa, vinegar, lime-juice, aerated waters, alcoholic drinks, tinned and preserved foods, the detection and estimation of the common adulterants in the above. Detection and estimation of antiseptics, preservatives, colouring matters, poisonous and deleterious substances in food.

Disinfectants.—The chemical examination of the more important disinfectants, more especially the estimation of Chlorine in Bleaching powder and chlorine solutions, formaldehyde, phenol. Demonstrations of special methods and processes and tests which cannot be conveniently performed by the class will be given from time to time.

THE PRINCIPLE AND PRACTICE OF PUBLIC HEALTH.

The Administration of Public Health, the practice in India and more particularly in this Presidency compared with that in England and Scotland, the United States, and European Countries. The Local Self-Government Department, and the Minister of Health. The Director of Public Health and his staff. The Public Health Commissioner and the Surgeon-General in their

relations with the Public Health Department. The Local Authorities, District Boards, Taluk Boards, Union Boards. The Municipalities. The Health Officer, District and Municipal and the City of Madras. The Collector, the Village Munsiff. The Village Panchayat and the Village. The Health Staff in Municipalities and Rural Areas. Other Bodies, Organisations and Officials with whom the Health Officer may have dealings. The law in relation to Public Health. The English Public Health Acts and the Rules and Regulations framed thereunder. The laws in force in the Presidency together with the Rules and Regulations made under these, Government Orders, Departmental and other Memoranda and Codes.

Note.—Detailed instruction in Sanitary Laws and Administration as outlined above, the practical application of these Laws and the discussion of problems arising in the administration of Public Health in the Presidency, will be given in a series of Special Lectures by an Assistant Director of Public Health.

Water.—The properties of water, the quantity and supply of water, sources of water-supply, storage and delivery, impurities, the chemical examination of water, the bacteriological examination of water, the interpretation of the results of a water analysis, the law relating to water-supply.

Air and Ventilation.—The composition and physical properties of air, impurities in air, diseases produced by impurities in air, examination of air, quantity of air required for ventilation, systems of ventilation, heating and cooling, examination of the sufficiency of ventilation.

Soils, Sites and Habitations.—Geological origin of soils, soil features which influence health, conformation, exposure, vegetation, irrigation, temperature, micro-organisms, organic matter, ground air, ground water, dampness, soil pollution, examination and comparison of soils, soil in relation to special diseases; Sites and habitations, design and construction, housing problems; Civic surveys and town planning; Schools, hospitals, other public buildings, markets, slaughter-houses, cowsheds, bakeries, grain stores; Hotels, hostels, tenement and lodging houses, labourers' dwellings, construction camps, temporary dwellings such as pilgrim camps, evacuation camps, inspection of sites and dwellings and other buildings.

Conservancy and Sewage.—Collection, removal, and disposal of town and house refuse, conservancy systems, latrines, urinals, collection, removal, and disposal of night soil, appliances, conservancy depots; collection, removal and disposal of sullage, the removal of sewage by water carriage, appliances and fittings, drains and sewers, ventilation, inspection and maintenance, disposal of sewage, purification of sewage, examination of sewage.

disposal of trade, effluents after treatment, the law relating to conservancy and sewage.

Note.—Detailed instruction in (1) water supply and distribution, (ii) air supply, ventilation, cooling and heating, (iii) sites, environment, construction of buildings, and sanitary fittings, (iv) the collection, treatment, and disposal of sewage and other refuse, (v) nature, strength and fitness of structural materials employed in sanitary works, (vi) design of municipal, domestic, and other special sanitary works, (vii) mensuration and drawing in relation to elementary building construction and the construction and use of scales and plotting of land surveys and sections, will be given by the Lecturer, Sanitary Engineering, in a special course of lectures.

Food.—Classification of foodstuffs, nutritive functions and nutritive value of foodstuffs, quantity of food required, dietaries and their construction, diseases connected with food. Meat, fish, eggs, milk, butter, and other animal and vegetable fats, grains and cereals, vegetables and fruit, sugar, bread, cheese, concentrated, prepared and preserved foods, the inspection and examination of foods and foodstuffs, beverages and condiments, the law relating to foods and the prevention of adulteration.

Industrial Hygiene.—Offensive and dangerous trades and the resulting nuisances and methods of control, industries and factories, industrial areas and factory sites, smoke and dust nuisance, industrial poisoning, disabilities and diseases due to industries and trades, the law relating to factories and dangerous and offensive trades.

Epidemiology and Infectious Diseases.—The nature and origin of infectious diseases, immunity and protection, causes and modes of spread of epidemics and epizootics, contagious diseases and diseases arising from insanitary conditions, the study of the more common infections and epidemic diseases, *e.g.*, cholera, small-pox, plague, relapsing fever, typhus fever, beri-beri, chicken-pox, diarrhoea and dysentery, enteric fevers, hydrophobia, influenza, kala-azar, leprosy, malaria, Malta fever, measles, cerebro-spinal fever, dengue, pneumonia, tuberculosis, tetanus, yellow fever, and certain diseases of animals which may be transmissible to men, *e.g.*, anthrax, foot and mouth disease, glanders, rabies, trypanosome infections; puerperal pyæmia. The prevention of infectious disease. The law in relation to infectious disease.

Note.—A special course of lectures on the natural history of the common epidemic diseases of India and more especially of South India, and on the practical applications of the above principles to the control of infectious diseases in the Presidency, will be delivered by an Assistant Director of Public Health. Another

course of lectures on the diseases of animals, etc., will be delivered by a Veterinary Officer.

Medical Inspection of School Children and School Hygiene.—The principles and methods employed; control of epidemic diseases in schools; school buildings, class rooms, seats and desks, common rooms, staircases, tiffin rooms, hostels, playgrounds, ventilation, and lighting, heating and cooling, water-supply and sanitary conveniences, sites and locations.

Note.—Practical demonstrations of the above principles will be given by the Medical Officer of Health during his course of outdoor training.

Maternity and Child Welfare.—Infant mortality and maternal mortality, causes, and influences, maternity and child welfare schemes, child welfare centres, health visitors and midwifery services.

Note.—A special course of lectures on the conditions prevailing in the Presidency and the measures taken to meet them will be given by an Assistant Director of Public Health.

Demonstrations of the working of a maternity and child welfare scheme will be given by the Medical Officer of Health during his course of outdoor training.

Vital Statistics.—Population, census, estimates of population, registration of births, deaths and marriages, calculation and correction of rates, causes of death, mortality and mobility rates, influence of race, age, sex, migration, occupation, housing season, climate, social and hygienic conditions, diseases on the above. Life tables, the collection and interpretation of statistical data, determination of the value of statistical data, statistical methods, frequency curves, correlation, contingency, probability.

Note.—A special course of lectures on the above principles will be delivered by an Assistant Director of Public Health.

Practical Sanitation.—Public Health surveys, village sanitation, sanitation of camps, improvised methods, management of fairs and festivals, personal hygiene, the disposal of the dead. Disinfection by heat and chemicals, disinfecting stations, disinfection, the law relating to disinfection and burial.

Note.—A special course of lectures on the management of fairs and festivals in the Presidency will be delivered by an Assistant Director of Public Health.

Vaccination.—Shall consist of a course of special lectures, demonstrations, and practical work in the preparation, standardisation and testing of vaccine lymph, vaccination and verification of results, the law and procedure in the Presidency, vaccination returns and statistics. Small-pox in the Presidency and its control.

Tuberculosis.—Shall consist of a special course of lectures on the practical aspects of tuberculosis, dealing with its etiology, pathology, diagnosis, prophylaxis and treatment, especially directed to its clinical and preventive sides, the control of tuberculosis, tuberculosis institutions, administration. Demonstrations to be given by the Superintendent of the King Edward Memorial Tuberculosis Institute.

Venereal Diseases—Shall consist of a special course of lectures and demonstrations on the practical aspects of the prevention of venereal disease, to be delivered by the Medical Officer in charge of the Venereal Wards of the General Hospital.

Town Planning.—Shall consist of a course of special lectures on town planning to be delivered by the Director of Town Planning.

Infectious Diseases.—Shall consist of a course of lectures, clinics, and demonstrations at the Hospitals for Infectious diseases, Madras, on the diagnosis and management of infectious diseases, and the administration of infectious diseases hospitals, to be delivered by the Superintendent of the Hospitals.

Instruction in Public Health Administration.—Will be given by a Medical Officer of Health approved by the Syndicate of the University of Madras, during the Spring and Vacation terms as provided for in the regulations above. It will include instructions on the relationship of the Health Officer with the local Authority and with the General Medical Practitioner, the operation of the various acts in every day practice, the routine practice of conservancy, sanitation, control of infectious diseases, inspection of foods, and dangerous and offensive trades, inspection of plans, sites, buildings, schools, insanitary areas, and all the other duties that a Health Officer may be expected to perform.

APPENDIX X.

FIRST EXAMINATION IN ENGINEERING.

Syllabuses.

PURE MATHEMATICS.

Co-ordinate Geometry.—Simple properties of the straight line, circle, parabola, ellipse and hyperbola (in Cartesian and polar Co-ordinates) and easy problems thereon.

Calculus.—Differentiation: simple application of the derivatives to geometry and mechanics: approximations and small errors: theorems of mean value: evaluation of indeterminate forms: maxima and minima of functions of one variable: change of variable: curvature: evolute, involute: tracing of well known curves from their Cartesian and polar equations: partial differentiation: envelopes: Taylor's and Maclaurin's series and their applications.

Integration of standard forms, integration by substitution, by the theory of rational fraction; and by parts; simple formulae of reduction: integration as a process of summation: areas, and lengths of plane curves: volumes and surfaces of solids of revolution: double and triple integrals as applied to centre of mass, moment of inertia and centre of pressure.

APPLIED MATHEMATICS.

Statics.—Composition and resolution of forces: moments: couples: conditions of equilibrium of forces in one plane: simple machines: friction: work: virtual work: centre of gravity: stable and unstable equilibrium: general conditions of equilibrium of forces in more than one plane: the common catenary: the parabolic catenary: light string on a rough curve.

Hydrostatics.—Transmission of fluid pressure: thrust of fluid on plane and curved surfaces: centre of pressure: thrust of fluid on bodies wholly or partly immersed: conditions of equilibrium of floating bodies: stability of floating bodies. Metacentre.

Pressure of atmosphere: Boyle's law: simple hydrostatic machines—*e.g.*, the hydraulic press, the common pump, air pump, the diving bell, syphon.

Dynamics.—Composition and resolution of velocities and accelerations; relative velocity, linear and angular; motion in a straight line with constant acceleration; Newton's Laws of motion; Momentum and impulse; Principles of conservation of linear momentum and energy.

Projectiles; impact; motion in a circle; simple harmonic motion; simple pendulum.

Displacement of a plane lamina in its own plane: translation and rotation: instantaneous centre: the pole curves. Moment of inertia and product of inertia; principal axes of inertia of a lamina; Kinetic energy of a rigid body rotating about a fixed axis: compound pendulum; conservation of angular momentum; Motion of a rigid body in one plane.

N.B.—Problems may be solved with the help of the calculus. Engineers' units will be employed.

PHYSICS.

Heat.—Temperature measurements; gas thermometer; pyrometers, their construction and uses; electrical resistance, thermo-electrical, radiation and optical pyrometers. Expansion of solids, liquids and gases and their practical applications. Heat as quantity, and methods of calorimetry. Calorimeters: Louis Thomson's, bomb, and Boys. Vaporisation: evaporation and ebullition; effect of pressure on the boiling point. Properties of saturated vapours; critical constants. Conduction of heat; convection, radiation and the laws of cooling. The nature of heat; determination of the dynamical equivalent of heat. The laws of thermodynamics. Carnot's cycle. Absolute scale of temperature.

Light.—The propagation of light; photometry. The laws of reflexion and refraction of rays of light: The sextant: passage of a ray through a prism. The direct reflection and refraction of small pencils at plane and spherical surfaces, passage through a lens. Formation of images. The telescope and microscope. The compound nature of white light; formation of a pure spectrum; the achromatic lens. Polarization.

Magnetism and Electricity.—Magnetic poles; lines of force; forces and couples on magnets in the magnetic field. Direction of fields due to current in a straight wire and coils. The effect of introducing an iron core into the magnetic circuit. Induced magnetisation. Magnetic properties of iron and steel; hysteresis. The more common cells; standard cells; current; E.M.F.; Ohm's law. Electrical units; Coloumb; Ampere; Volt; Ohm; Watt; Watt hour. Specific resistances. Measurement of resistances; Wheatstone bridge. Conductors in series and parallel. Drop of potential.

Potential energy of a circuit carrying current placed in a magnetic field and derivation of forces and couples on circuit. Application to moving coil instrument.

Electro-magnetic induction.—Maxwell's law. Dynamos and motors. Induction coil.

Charge.—potential; capacity of condensers; discharge current; energy of charged condensers.

TECHNICAL CHEMISTRY.

(Only an elementary treatment is expected.)

A. Physical Chemistry and its applications.—

Kinetic theory.—Gas Laws and their importance in industrial processes. Refrigeration and liquefaction of gases—critical points—Joule Thompson effect—principle of counter currents systems. Henry's Law of partial pressures—partition co-efficient—miscible, non-miscible and partly miscible liquid systems and principles of steam distillation processes in industry. Catalysis—an elementary theoretical treatment—examples from industries illustrating in oxidation-reduction, hydrogenation and the like processes.

Elementary treatment of the theory of electrolytic dissociation and its application in electroplating with details regarding choice of electrolyte, current density and efficiency—nature of the deposits with and without adhesives, etc.

B. Chemistry of Engineering Materials.—

1. *Technology of water*—impurities and sources—Drinking water source and its evaluation from a hygienic point of view—purification methods of filtration—filters—water supply—chemical sterilisation of water.

Boiler feed waters.—Temporary and permanent hardness—boiler compounds—water softening and types of softeners—Iron in water and its treatment.

2. *Fuels.*—Solid, liquid and gaseous, fuels—Proximate and ultimate analysis of fuels—evaluation of fuels—calorific value and intensity—chemistry of combustion—economic utilisation of fuels—temperature control and measurement—Analysis of flue gases and its significance.

3. *Paint and varnishes.*—Definitions — white colours — coloured pigments (blue, green, yellow, red, brown, black) lakes. Varnishing oils—chemistry of drying—solvents. Corrosive and anti-corrosive pigments—Resins—Shellac—Balsam—Lacquer varnishes.

4. *Building Materials.*—Lime—cement—plaster—clay—sand—kilns and the reactions in them. Gypsum, hydraulic lime—cement, (natural and portland). Chemistry of cement manufacture and its analysis—The phenomena of setting and hardening and the factors that influence them,—bricks—porcelain and refractories, adhesives.

5. *Abrasives and polishes—rubber and insulating materials. Lubricants.*

6. *Metallurgy*.—A general treatment of non-ferrous metals and their alloys. Iron and steel-corrosion—Electricity in metallurgical operations.

7. A few inorganic industries like those of sulphuric acid, nitrogen, chlorine, ammonia and phosphates.

APPLIED MECHANICS.

Simple Stresses and Strains.—Compressive, tensile, shearing, and bearing stresses; Hook's law, stress-strain and load-extension curves; dead, live and shock loads; factors of safety and working stresses; work and resilience; elastic moduli, Poisson's ratio and relation between elastic constants; temperature stresses; composite bars.

Properties of Sections.—Calculation and graphical determination of areas, positions of centroid and neutral axes, moments of inertia, moduli of section and radii of gyration, with special reference to structural shapes.

Beams.—Cantilever, simply supported and overhanging beams subject to symmetrical or unsymmetrical static loading, and fixed beams subject to symmetrical static loading only—calculation and graphical determination of bending moments and shear forces; relation between load distribution, shearing force and bending moments. Theory of simple bending—proofs of formulæ and their applications. Strength of beams.

Deflection.—Relation between curvature, slope and deflection; Proofs of standard formulæ and their applications. Stiffness of beams. Evaluation of deflection from bending moment diagrams.

Statically Determinate Frames.—Calculation and graphical determination of forces in members of simple roof trusses and braced girders.

Thin Cylinders.—Stresses and strains in thin cylinders subject to uniform internal or external pressure or both.

Riveted Joints.—Resistance of a rivet or bolt in single or double shear and in bearing, and the working strength of a rivet or bolt; strength of lap and butt joints; efficiency of joints.

CIVIL ENGINEERING I.

Building Materials.—

(a) *Stones, Bricks and Tiles*.—Different varieties, their characteristics, tests and uses; methods of quarrying and blasting rock and dressing stone; choice and suitability of materials for manufacture of bricks and tiles and different methods of manufacture of same.

(b) *Limes, Cements, Mortars and Concrete.*—Different varieties; their properties, tests and uses; choice and suitability of materials for manufacture of limes and cements, and methods of manufacture of same. Standard mixtures for different purposes. Artificial stones, their preparation and uses.

(c) *Timbers.*—Varieties, classification, characteristics, tests and uses of Indian timbers. Defects in timbers and causes of decay. Seasoning and preservation. Fire proofing. Market forms and standard sizes for different purposes.

(d) *Iron and Steel.*—Varieties, classification, composition, characteristics, tests and uses of iron and steel. Important iron ores and their properties. Preparation and treatment of ores for smelting. The blast furnace and its accessories. Manufacture of iron and steel by different processes. Modern steels and alloy steels, their properties and uses. Different treatments of iron and steel. Manufacture of castings for different purposes and general foundry practice. Rolling mills for mild steel sections and types of British Standard Sections. British Standard Specifications for structural steel. Detection of defects and flaws in iron and steel.

(e) *Paints and Varnishes.*—Different kinds of paints and varnishes and other protective coverings used in building construction, their preparation, properties and uses.

(f) *Miscellaneous Materials.*—Other metals and non-metals commonly employed in building construction, their properties and uses.

CIVIL ENGINEERING II.

Building Construction.—

General.—Preliminary investigations as to suitability of site for different types of buildings; trial pits and borings; determination of bearing capacity of soils, etc.

Foundations.—Drainage of building site; excavation and trenching; methods of timbering excavations; shoring and underpinning; methods of improving bearing capacity; ordinary foundations such as masonry footings, grillage and piled foundations and simple calculations pertaining thereto.

Plain Masonry and Brick work.—Different kinds of bonds and methods of laying; coursed and uncoursed rubble, ashlar; coping, cornice and string courses; finishing and painting; damp-proof construction; anchorages in walls; fire resisting construction for flues, chimneys and fire places; dressings such as door-jambs and door and window sills; flat, segmental, pointed and relieving arches; invert; centering for arches and striking of centres; vaults and domes.

Floors and Roofs.—Floors of different materials; terraced and pitched roofs; jack-arched floors and roofs; steel beam and girder floors—simple design calculations; timber, mild steel and composite roof trusses,—simple design calculations; different types of roof coverings and ceiling and constructional details.

Carpentry and Joinery.—Different kinds of joints in timber; doors, windows and ventilators; partitions; scaffolding and false-work; simple roof and bridge frames.

Stairs.—Different types of stairs—straight and spiral—in timber, plain masonry, iron and concrete, simple design calculations.

Columns.—Details and methods of construction in brick, stone, iron and concrete.

MECHANICAL ENGINEERING.

An elementary knowledge is required of the construction and working of steam boilers; Prime movers:—steam, oil, gas and petrol engines; water turbines and Pelton wheels; Machine tools.

Rudiments of Machine Design.—Fastenings; bolts, nuts, keys and cotters; riveted joints and connections generally; pipes and cylinders; shafting and journals; pedestals; wall fixing, etc.

ELECTRICAL ENGINEERING.

Electric Circuit.—Practical system of electrical units; conductors and insulators; Ohm's Law; Kirchoff's circuit Laws and applications.

Magnetic Circuit.—Principles of electro-magnetic induction; calculation of Ampere turns; Hysteresis; Eddy currents.

Measurements.—General principles of construction and use of moving coil; moving iron; induction; Dynamometer and hot wire instruments; Ohmmeter; fluxmeter.

Electrical Machines.—General principles, characteristics and uses of different types of continuous current generators and motors only; uses of elementary alternating currents.

Batteries.—Acid and Alkaline types; characteristics and uses.

Power Supply and Distribution.—Outline of a small D.C. Plant. House wiring. Accessories. Testing faults.

SURVEYING.

Chain Survey.—Principles; use and adjustments of instruments; clearing obstructions; plotting; calculation of areas; Check, scale; planimeter.

Compass Survey.—Prismatic compass. Use and adjustments; Magnetic variation; survey with and without chain; checks.

Plane Table.—Setting and use. Simple alidade, prismatic and telescope alidades; Resection. Checking work: Survey with or without chain. Three and two point problems.

The Telescope.—Principles; refraction and curvature; reciprocal levelling.

Levelling.—Levelling, forms of field book; types of levels; uses and adjustments; fly levels; spot levels; longitudinal and cross section levelling; contouring on land and water; hand levels; hill contouring; ghat roads; barometric heights.

Earthwork and Capacity of Reservoirs.—By contour lines and cross-section levelling.

GEOMETRICAL DRAWING.

Practical plane geometry; proportional lines and angles. Areas of plane figures. Methods of drawing and chief properties of plane curves; parabola, ellipse and hyperbola; cycloidal, spiral and other common curves. Graphical determination of centre of gravity and moments of inertia of plane areas.

Practical solid geometry and projection; lines; points and planes. Projection of simple solids; regular solids, sections of solids; development of plane and curved surfaces. Tangent planes. Interpenetration of solids. Determination of shadows. Isometric projection. Elements of perspective.

BUILDING DRAWING.

(a) Detailed drawing of building details as dealt with in Building Construction course (*vide* syllabus for Civil Engineering II).

(b) Working drawings of small buildings from sketches and specifications together with simple design calculations.

MACHINE DRAWING.

(a) Copying accurately to scale drawings of simple machine details such as bolts, nuts, keys, cotters, rivets, and riveted joints, pipes and pipe joints, bearings, hangers, pedestals, wall fixings, etc.

(b) Drawings of simple machine and engine parts from sketches. Ability to supply additional views and give some idea of the proportions of simple machine parts.

BACHELOR OF ENGINEERING.**Civil Branch.***Syllabuses.***PURE AND APPLIED MATHEMATICS.****PURE MATHEMATICS.****1. Solid Co-ordinate Geometry.—**

The plane, the sphere, the ellipsoid, the paraboloid and the hyperboloid; standard forms of their cartesian equations; Tangent planes and normals; sections.

2. Elementary differential equations.—

Ordinary differential equations involving two variables.—

Equations of the first order and first degree; standard forms; The general linear equation with constant co-efficients; The method of solution by operators; Equations reducible to the linear form with constant co-efficients.

Simultaneous linear equations of the first and second order with constant co-efficients.

3. Fourier's series and elements of Harmonic Analysis.

N.B.—Easy problems involving direct applications of the general theorems are expected to be answered.

APPLIED MATHEMATICS.**(A) Dynamics of a particle.**

(i) *Rectilinear motion.*—Equations of motion; simple harmonic motion; constant disturbing forces; periodic disturbing forces; damped and forced oscillations; various laws of resistance.

(ii) Motion in two dimensions.—

Cartesian co-ordinates.—Composition of simple harmonic motions; motion of a projectile in a vacuum, in a resisting medium; different laws of resistance; equation of energy; revolving axes.

Polar Co-ordinates.—Velocity and acceleration in polar co-ordinates; central forces; differential equation of orbit; Law of inverse square.

Constrained motion.—Tangential and normal acceleration; motion on a fixed smooth or rough curve; motion in a circle, motion in a smooth or rough cycloid, time of describing an arc; motion on a revolving curve; motion of a particle in a revolving tube.

(iii) *Motion of two or more particles.*—Principles of conservation of energy and momentum; two particles connected by a string passing over a pulley; Impulses; motion of a chain; motion of varying mass.

(B) *Dynamics of a rigid body.*—

(i) Moments and products of inertia; momental ellipsoid; momental ellipse; equimomental systems; principal axes.

(ii) D'Alembert's principle; general equations of motion; Independence of translation and rotation; Impulsive forces.

(iii) *Motion about a fixed axis.*—Fundamental theorem. The compound pendulum. Centre of oscillation. Torsional oscillation. Bifilar suspension. Pressures on the fixed axis in the case of bodies symmetrical and not symmetrical. The ballistic pendulum. Impulsive forces. Centre of percussion.

(iv) *Motion in two dimensions.*—Finite forces. General principles of conservation of energy and of linear and angular momentum. System with one degree of freedom. Oscillations about equilibrium. Impulsive forces.

(v) *Motion in three dimensions.*—

Angular velocities about more than one axis. General equations of motion of a body in three dimensions referred to axis whose directions are fixed. Principles of momentum and energy.

N.B.—Easy problems involving direct applications of the general theorems are expected to be answered.

STRENGTH OF MATERIALS AND THEORY OF STRUCTURES—I.

Compound Stresses and Strains.—Stresses under combined strains, principal stresses and principal planes; ellipse of stress; application to different cases.

Behaviour of Materials under Test.—Methods of testing and appliances used in determining the elastic constants and testing materials to destruction under tension, compression, shear, torsion and bending; impact and hardness tests; tests under repeating and alternating stresses; fatigue of metals; factors of safety and working stresses; latest advancements in the science of testing materials.

Circular Shafts.—Theory of pure torsion, shear stress, angle of twist, strength and resilience; horse-power transmission; combined torsion and bending with or without end thrust; determination of principal stresses and maximum shear stresses; equivalent bending moments and equivalent twisting moments.

Helical Springs.—Extension under axial pull and maximum shear stress; angle of twist and torsion and maximum direct stress; strength and resilience.

Thick shells and cylinders.—Stresses and strains under internal and external pressures.

Deflection.—Principle of work as applied to deflection; deflection of simple frames; elastic curves for beams of uniform or variable section; distribution of shear stresses in a beam section; energy stored in a beam and its resilience.

Continuous beams and propped cantilevers.—Theorem of three moments, calculation and graphic determination of reactions, bending moments, shear forces, deflection and slope; Characteristic points.

Columns and Struts.—Long and Short columns; axial and eccentric loading; effect of end conditions; equivalent lengths and slenderness ratio; eccentricity factor; column formulae, their derivation and practical applications; laterally loaded columns and struts.

STRENGTH OF MATERIALS AND THEORY OF STRUCTURES—II

Retaining walls and Dams.—Theories of earth-pressure, graphical constructions for earth pressure; general conditions of stability; the middle third rule; lines of resistance; distribution of pressure on foundations and maximum intensities of pressure. Rankine's theory as applied to foundations.

Moving Loads and Influence Lines.—Curve of maximum bending moments and maximum shear forces; the enveloping parabola and determination of equivalent uniformly distributed load; influence lines for reaction, shear force, bending moment and deflection; influence lines for forces in members of braced girders and spandril-braced arches; reversal of stress under live load.

Suspension Bridges and Arches.—Stresses in loaded cables and hanging chains; stiffening girders; moments and shears in such girders; elastic theory of the rigid arch; Eddy's Theorem; stresses due to rib-shortening and temperature changes; reactions and horizontal thrust in rigid, two-hinged and three-hinged arches; reaction loci; lines of resistance through rigid and hinged arches under dead and live-loading.

Structural Frames.—Calculation and graphical determination of forces in members of roof trusses with knee-braces, in braced girders of variable depth with or without secondary members and in trestles; displacement diagrams for braced girders; analyses of simple types of indeterminate frames. Portal and sway frames.

HYDRAULICS.

Fluids at rest.—Properties. Intensity of pressure; transmissibility and measurement of pressure; total pressure; centre of pressure.

Floating bodies. Equilibrium, stability, metacentre

Fluids in motion.—Ideal fluid—Steady and unsteady motion—Stream line—Bernoulli's theorem. Applications—Venuri meter—Vortex motion.

Orifices and notches. Standard conditions—Co-efficients of contraction, velocity, discharge and their determination for small orifices. Form of jet—Suppressed contraction—Large orifices—Drowned and partially drowned orifices—Velocity of approach—Sudden expansion and contraction—Mouth pieces—Time of discharge. Weir; standard conditions—Rectangular—End conditions—Triangular, trapezoidal, velocity of approach; drowned weirs—Height of sill—Nappe and its stability—Flat crested weirs—Gauging Weirs—weirs and anicuts—Bridge openings—Sluices.

Pipes—Fluid friction—Viscosity—Turbulent motion—Critical velocity—Loss of head and hydraulic gradient—Straight and circular pipes of uniform diameter and hydraulic mean depth—Empirical formulæ, Chezy, D'Arcy, Kutter and Logarithmic—Bends—Elbows—Valves—Variation of velocity in cross section—Practical problems—Diameter of pipes—Branch pipes—Hydraulic transmission of power—Variable diameter—Syphons—Hammer action.

Channels—Variety of forms—Steady motion in uniform channels—Formulæ D'Arcy, Bazin, Kutter, Logarithmic—Variation of velocity in cross section—Measurement of discharges—Sections of aqueducts and sewers—Best form of channels—Non-uniform flow—Backwater.

Measurement of flows, discharges—Pipes, meters—Pitot tube—Chemical method—channels; weirs—Formulæ, Floats—Ripple method—Gauges—Current meters.

Impact—Pressure on fixed and moveable vanes—Work done.

Water wheels, Turbines, Piston engines.

Pumps—Reciprocating, centrifugal—Hand—Ram—Airlift, etc.

STRUCTURAL ENGINEERING—I.

Plain Masonry.—

Retaining Walls and Dams.—Practical profiles; data, formulæ and empirical rules for design; methods of relieving side pressure and improving stability; provision for drainage; expansion joints; other important details of construction; detailed design of gravity and panelled retaining walls and gravity and arched masonry dams.

Bridges and Culverts.—Data for design; practical rules for design; water-way for bridges and economical spacing of piers; usual dimensions for high-way and railway bridges; provision for drainage; design of piers and abutments; detail design of arched bridges and culverts from specifications.

Miscellaneous Structures.—Principles of design and important details of construction of structures such as chimneys, tanks, towers, domes, etc.

Reinforced Concrete.—

General Principles.—Theory and design of rectangular beams, Tee-beams, slabs and columns; arrangements of laying reinforcement; leading systems of reinforcement; economical methods of construction; design and details of form-work.

Buildings and Bridges.—General principles of design; methods and details of construction; detailed design of different types of buildings and high-way bridges.

Tanks and Towers.—General principles of design; methods and details of construction; detailed design of low and high tanks from specifications.

Retaining Walls.—Cantilever and counterfort types—their detailed design from specifications; methods and details of construction.

Miscellaneous Structures.—General principles relating to the design and construction of bunkers, gantries, domes, jetties, pile and raft foundations.

Foundations.—Difficult foundations such as coffer-dams, well foundations, cylinder foundations, cribwork and caissons and concrete monoliths—details of construction and methods of working.

STRUCTURAL ENGINEERING II.

Structural Steelwork.—

Beams and Girders.—Properties of British Standard sections; detailed design of beams, compound girders, built-up plate girders and lattice girders; limiting spans and economical depths; design of flanges and webs; curtailment of flange plates; determination of size, pitch and arrangement of rivets; types of stiffness and rules for their spacing; design of joints and connections; methods of fabrication; detailed design of crane and gantry girders of built-up plate and lattice girder types and typical details of construction.

Columns and Struts.—Plain and built-up sections; assumptions regarding end conditions; practical formulae for design; detail design of stanchions for buildings and of compression members of roof trusses and lattice girders; design and details of caps, bases and brackets for stanchions; joints and splices on stanchions; size, pitch and arrangement of rivets on flanges of plated stanchions; lacing on stanchions.

Roof Trusses.—Types of roof trusses; limiting spans; rise and camber; economical spacing; data for design; detailed design of members including purlins, joints and connections; wind bracing on roof trusses; detailed design of steel framed sheds.

Bridge-work.—Data for design; detailed design of high-way and railway bridges of plate and lattice girder types; economical proportions, standard dimensions, minimum clearances and head-room; different types of floors; transverse and lateral bracing; end bearings; provision for drainage; other important details of construction. Important considerations and general principles relating to the design of cantilever, suspension, swing, lift and bascule bridges.

Miscellaneous Structures.—General principles relating to the design of tanks and towers, structural parts of cranes, tall chimneys, bunkers, domes, jetties, pipe-lines, etc.

Timber.—General principles of design in timber with special reference to structures such as roof trusses, beams and columns, bridges, trestles and form-work for reinforced concrete structures.

Erection.—General methods of erection of buildings and bridges.

HIGHWAY ENGINEERING.

Importance of roads; classification of roads; preliminary investigations; reconnaissance surveys; considerations affecting alignment, obligatory points, grades, ruling gradients, curves and widths; availability of materials of construction; different types of roads and pavements; methods of construction; materials of construction, their tests, properties and specifications; treatment of road surfaces; sub-drainage and surface drainage; pipes, drains, gutters and culverts; section of roads; camber and crown formulæ hill roads and causeways; construction and maintenance of embankments and cuttings; repair of roads. Highway bridges, types of bridges; their alignment; different types of floors and their relative advantages. Guard rails, road signs, side walls, curbs, railings, etc. Arboriculture; rules for preparation of road projects. Standard specifications for different types of roads. Machinery employed for construction, maintenance and cleaning. Latest advancements in highway engineering.

Note.—Earth work calculations are dealt with under surveying.

RAILWAY ENGINEERING.

Importance of railways, classification of railways, preliminary investigations, reconnaissance, preliminary and location surveys; obligatory points, grades, ruling gradients, curves and the gauge problem; valley, mountain and cross country routes; the bridge and tunnel spirals; other considerations affecting alignment; cuttings and embankments, their profiles, methods of construction and maintenance; dredging and excavating machinery; Culverts—data for design, types of culverts and methods of construction. Tunnels; considerations favouring tunnel construction or open cut; shafts for tunnels; form of cross section of tunnels through different rocks; methods of driving headings; methods of timbering or strutting tunnels; methods of opening out or breaking up headings; drainage and ventilation of tunnels, single *versus* double tunnels; tunnel linings; drilling and blastings; tools employed and explosives used; subaqueous tunnels; shield tunnelling, tunnelling between cofferdams, tunnelling under compressed air and tunnelling with precast lengths; brief particulars of important existing tunnels. Permanent-way and track work; ballast, sleepers, rails, rail chairs, joints and fastenings; points and crossings; details of construction; different types of crossings; formulæ and practical rules for setting out; construction and maintenance of track work; creep of rails. Railway bridges; types of bridges; minimum clearances and headroom; waterway for bridges; lay out of track work over-bridges; methods of testing the strength of bridges and of remodelling and strengthening the same. Mechanics of railway traction; compensation for curvature and gradient. Signals, their forms and uses; interlocking, principles and mechanisms—Miscellaneous structures in station yards. Standard dimensions on Indian railways. Rules for preparation of railway projects. Latest advancements in railway engineering.

Note.—The setting out of railway curves is dealt with under surveying. Design of railway bridges and railway structures is dealt with under Structural Engineering.

DOCK AND HARBOUR ENGINEERING.

Physical geography in relation to docks and harbours; natural phenomena, prevalence and intensity of winds, coastal change, accretion and denudation; effect of artificial interference; tidal phenomena; Waves—form height and length, wave velocity and wave action.

Objects of docks and harbours; considerations affecting choice of site; entrances to docks and harbours; foreshore protection and channel regulation; wet, dry and floating docks; tidal basins and harbours, different forms and types; details and methods of construction. Lock gates, their construction and working;

machinery employed. Different types of quay walls, their construction and maintenance; signals and light houses, ferries and landing piers. Description of important existing docks and harbours. Latest advancements in dock and harbour engineering.

IRRIGATION ENGINEERING.

General.—Importance of irrigation works; productive and protection works; projects. General principles of flow, lift, perennial, basin or inundation, and well irrigation; principal crops; duty, factors affecting duty for crops under storage and direct flow irrigation, duty in Madras systems. Rainfall and Runoff—study of rainfall statistics; utility in run-off calculations; flood discharge and its estimation. Percolation, evaporation and absorption losses in canal and storage systems; uplift and piping; stability of works affected by percolation. Silt-analysis, silting of reservoirs; flow in canals; Kennedy's critical velocity and its applications.

Diversion works.—General description of rivers; river weirs; selection of sites; types on permeable and impermeable soils; weir crest shutters; principles governing the design and construction of river regulators, head regulators, undersluices, flood banks, and protective works. Retrogression of levels.

Storage works.—Selection of site; masonry dams; principles of design of gravity, arch and other types; uplift in masonry dams; drainage galleries; expansion joints; methods of construction. Earthen dams; causes of failure; types of dams; materials for dams, methods of construction, drainage of earthen dams and foundations. Component works—sluices, surplus escapes; ordinary types, stepped waste weirs, syphon spillways; selection of sites. Tanks—isolated and rainfed—single or in groups, supply, capacity. Repairs to bunds and breaches. Flood absorptive capacity of reservoirs; formulæ for design of weirs.

Distribution Systems.—Design and alignment of canals, distributaries, etc., in deltaic and nondeltaic countries; capacity, command, limiting velocity, etc. Drainage, necessity, water logging, alkalinity of soils; drainage, principles in design of drainage channels, outfalls; lining of canals. General description, construction and design of masonry works on canals—(a) for regulation of water level—rapids, falls or drops, notches, escapes, syphon-well drops, sluices—(b) cross drainage works and surplus works—aqueducts, syphon aqueducts, superpassages, level crossings, inlets and outlets—(c) communication works—road dams, fords, etc.

Navigation canals.—Main features; locks, desirability of combining navigation and irrigation.

River Training works.—Spurs, groynes, bells, bunds, mattresses, aprons, etc.

SANITARY ENGINEERING.

Public Health Legislation.

HYGIENE AND PUBLIC HEALTH.

Bacteriology.—Application to analysis of water and sewage.

Sanitary Engineering.—Scope and objects.

Water-supply.—Importance, ancient and modern water-works, quantity required.

Sources.—Rain, springs, rivers, lakes.

Wells.—Geology, shallow, deep and artesian wells Construction, yield, quality.

Rivers.—Trenches, infiltration gallery.

Storage reservoirs.—Site, capacity, compensation water, dams, form, design, construction, waste weirs outlet conduits, valve tower.

Conveyance.—Hydraulic gradient, types of aqueducts, syphons, air valves, balancing reservoirs.

Service reservoirs.—Open and closed reservoirs, capacity and construction, water towers, elevated tanks, stand pipes.

Pumps and pumping.—Pumps and suitability, pumping station.

Purification.—Sedimentation, coagulants, effects of storage on purification, infiltration galleries.

Slow filtration.—Filter beds, area, size, arrangement of sand layers, materials and construction, rate of flow, regulation, cleaning, remarks.

Rapid filtration.—Types of filters, rate of filtration, operation of mechanical filters.

Sterilization.—By chlorine, light and electricity.

Softening.—Hardness in water, methods of softening.

Distribution.—Combined and dual systems, intermittent and constant supply, mains and branches, methods of arranging distribution pipes, watering posts, fire hydrants, taps, house fittings.

Waste detection and prevention.—Meters.

SEWERAGE AND SEWAGE DISPOSAL.

Refuse collection and disposal.—Sanitary arrangements in houses, house refuse, sullage, nightsoil, conservancy systems. Collection and removal. Disposal on land. Incinerators, destructors.

Trade effluents.—Their treatment.

Drainage and sewerage.—Rainfall, house drains, surface drains, underground sewers, combined, separate and partially separate systems of sewerage. Measurement of sewage flows, branch and main sewers, design and construction of manholes and sewers, ventilation and cleansing, self-cleansing velocity, excessive and inadequate falls, automatic flushing, lifting of sewage, pumps, ejectors, lifts, intercepting and outfall sewers and their ventilation, storm overflows, outfall into sea.

Sewage disposal.—Character and composition of sewage, disposal on land, board irrigation, intermittent irrigation; sewage sludge, utilization as manure, disposal in the sea.

Bacterial purification.—Contact beds, intermittent sand filtration, precipitation, septic tanks, trickling filters, sludge, disposal of sludge, activated sludge, design of disposal works.

Public utilities.—(Water-works, sewerage and sewage disposal), hospitals, libraries, fire stations, schools, markets, burial and burning-grounds, slaughter-houses, public baths, parks and playgrounds, theatres and cinema halls, etc.

Town planning.—General principles. Healthy and unhealthy areas. Town Planning and Housing Acts and Regulations. Reconstruction.

Engineering contract and specifications.—Law of engineering contracts. Importance of clear and definite writing of contracts and specifications.

Engineering administration.—Details of engineering organization for construction and operation. Study of labour problems, welfare, sanitation and safety.

SURVEYING.

Theodolite.—Universal instrument—Use and adjustments of different types—errors.

Heights and distances.—

Traverse surveying.—Theodolite and chain.

Theodolite and stadia.

Plotting by protractor or by co-ordinates.

Setting out curves.—Simple, compound and transition curves. Tunnels—Earthwork slopes and vertical curves—Curve ranger—Setting out and measuring engineering works.

Triangulation.—Minor triangulation; choice of stations; proportions of sides; adjustment of angles by trial and by method of least squares; Satellite stations; intersected points—Calculation of co-ordinates—Base lines instruments and use—Reduction of measurements.

Tacheometry and Subtense surveying.

Principles—observations and their reductions—plotting by protractor—Tacheometric table and slide rules—Tacheometric plane table—direct reading tacheometer.

Geodesy.—Spherical trigonometry—Convergence of meridians—Setting out parallels of latitude.

Field Astronomy.—*Definitions*—Approximate motions of sun and stars—Astronomical tables. Methods and calculations in determination of true meridian, latitude, longitude and time. Solar attachment.

Photographic Surveying.

Precise levelling.

Box sextant.

Other instruments and methods of survey.

Maps and map-making.

Tides and tide reduction.

Hydrographic Surveying.—

Soundings; location of soundings; charting; Cross-sections of streams and rivers; discharge of rivers.

CIVIL ENGINEERING DRAWING AND DESIGN—I.

(a) Designing and detailing important types of buildings, bridges and culverts in plain masonry or timber.

(b) Designing and detailing steel-work for steel-framed buildings, plate and lattice girder bridges (road or railway), tanks and towers.

(c) Designing and detailing reinforced concrete buildings, highway bridges, retaining walls, tanks and towers.

CIVIL ENGINEERING DRAWING AND DESIGN—II.

(a) Designing and detailing important types of irrigation works such as tank sluices, tank surplus weirs, regulators, drops, syphon aqueducts, super-passages, escape locks, etc.

(b) Designing and detailing types of works relating to Sanitary Engineering.

Mechanical Branch.**SYLLABUSES.****MATHEMATICS I AND II.**

Same as B.E. Civil.

STRENGTH OF MATERIALS AND THEORY OF STRUCTURES I.

Same as B.E. Civil.

MECHANICAL AND ELECTRICAL.**THEORY OF MACHINES.**

Kinematics and Pure Mechanism.—Definition of a machine; machine elements and pairs; links; chains and mechanisms.

Constrained motion; translation and rotation; instantaneous centres and centrodes.

Virtual motion in mechanism; velocity and acceleration diagrams.

Altered mechanisms; expansion of elements.

Higher pairing involving plane motion; spur wheel trains; cam trains, etc.

Mechanisms containing non-rigid links; belt-gearing, chain and rope gearing, etc.

Ordinary chains involving screw and spheric motion; worm gearing; universal joints, etc.

Applications of Statics and Kinetics.—Friction of rest and motion; friction of lubricated surfaces; friction in sliding and turning pairs, in pivots and toothed gearing; friction in mechanism and efficiency of machines.

Lubricants, their qualities and properties; tests of lubricating oils; lubricants for different classes of machines, types of lubricator.

Inertia forces in mechanism; balancing; gyrostatic action

Effort and resistance; steadiness, crank effort, governors and flywheels.

ELECTRO-TECHNOLOGY I AND II.

Same as B.E. (Electrical).

HEAT ENGINES—I.

(a) *Thermodynamical Principles*.—Joule's Law; Carnot's cycle; perfect heat engine; second law; gaseous expansion; pressure-volume and temperature—entropy diagrams; air engines; air compression; internal combustion engines, gas, oil and petrol types and working; features of cycles; proportioning of mixtures; efficiencies, engine testing.

(b) *Refrigerating Plant*.—Theory and general arrangement of the common types.

(c) *Automobiles*.—Modern car and engine types; valve systems; carburetters and fuel system auxiliaries; modern electrical ignition systems; clutches and change-speed gearing; universal joints and differentials; lubrication and cooling systems; the chassis and its components; starting and lighting systems.

HEAT ENGINES—II.

Thermodynamics of the generation, expansion and condensation of steam, heat diagrams, etc.

Steam Engines.—Early forms and modern developments; high speed engines; efficiencies of non-condensing; condensing, simple, compound and multiple expansion; stationary and locomotion types; steam jacketing and superheating.

Steam Turbines.—The de Laval turbine, compound impulse turbines, reaction turbines; combined types; effect of high pressure, super-heat and vacuum; governing.

Engine Accessories and Details.—Condensers; air pumps; circulating pumps; cooling tanks, etc.; cylinders; pistons; cross-heads; guides, connecting rods, cranks, flywheels, glands; pipes; governors.

Valves and Valve Gears.—For stationary and locomotive steam engines; D. Slide valve; Meyer's expansion valve; link motions and radial gears; Corliss valves; drop valves and trip gears; valves for internal combustion engines, air compressors and refrigerating machines; diagrams and flywheel calculations.

FUELS, GAS PLANTS AND BOILERS.

Fuels.—Coal, wood, petroleum, gas, petrol, alcohol, etc., physical characteristics; approximate chemical composition; heat of combustion; carbonization of coal and distillation.

Gas Plants.—Gas-producers; pressure and suction plants; arrangement and working.

Boilers.—Ordinary forms of stationary, locomotive; marine; water-tube and other types; natural, forced, induced and mixed.

draught; heating surface, fire-grate area; boiler efficiency; economizer, superheaters, feed-water heaters; accessories and management.

HYDRAULIC MACHINERY.

Water Wheels and Turbines.—The action of a jet upon vanes, whether at rest or in motion straight or curved; water wheels; theory design and efficiency; turbines; theory design and efficiency; parallel, outward and inward flow; governing; surge tanks, etc.

Pumps.—Bucket and plunger; pistons, valves; air vessels and stand-pipes; efficiency of pumps. Centrifugal and turbine pumps; pulsometer; rams; air-lift pumps; gas pump, etc.

Hydraulic Transmission of Power.—Accumulators, valves and mains; cranes; lifts; riveters, etc.

MACHINE TOOLS AND WORKSHOP PRACTICE.

Cutting of Metals.—Tool steels; shape and preparation of tools; lubrication; speed of cutting and power required.

Machine tools.—Lathes; early forms and modern developments; turret and other lathes adopted for special purposes; screw-cutting tools and chucks; screwing machines; boring and turning mills; milling machines; planing machines; shaping machines; slotting machines; drilling machines; sawing machines; gear-cutting machines; grinding and other miscellaneous machines. Methods of driving and general arrangement of machine tools, shafting; electrically driven machines.

Foundry Practice.—Pattern making and Core box; Moulding sand; Characteristics; Green Sand Moulding; Dry Sand Moulding and loam moulding; Core making; special cores for pipes and cylinders. Simple moulding machines. Blowers, Cupolas; method of charging, casting.

Smith Shop.—Furnaces. Building, flooring. Steam, pneumatic and Drop Hammer. Welding—Types-examples. Heavy forging; simple examples.

Cutting of Metals.—Tool steels; shape and preparation of tools; lubrication; speed of cutting and power required. Machine tools—lathes; early forms and modern developments; turret and other lathes adopted for special purposes; screw cutting tools and chucks; screwing machines; boring and turning mills; milling machines; planing machines; shaping machines; slotting machines; drilling machines. sawing machines; gear cutting machines; grinding and other miscellaneous machines. Methods of driving and general arrangement of machine tools, shafting; electrically driven machines.

Measurements.—Surface plates; callipers and gauges. Fits; Tolerance and allowance. Limits and limit gauges. Measuring instruments; Vernier Caliper; Micrometer Caliper; Internal Micrometers; Micrometer depth gauge. Gear tooth Vernier and Ames dial.

MACHINE DRAWING I AND II.

Machine designs: Preparation of detailed working drawings of machinery and plant from given specification and from students' own design.

Electrical Branch.

SYLLABUSES.

MATHEMATICS I AND II.

STRENGTH OF MATERIALS AND THEORY OF STRUCTURES I.

Same as B.E. (Civil).

THEORY OF MACHINES.

Same as B.E. (Mechanical).

HEAT ENGINES.

Thermodynamical Principles.—Joule's Law; Carnot cycle; perfect heat engines; second law; gaseous expansion; pressure-volume and temperature—entropy diagrams; air engines; air compression; internal combustion engines; gas; oil and petrol; types and working; features of cycles; proportioning of mixtures; efficiencies; engine testing.

Thermodynamics of the generation, expansion and condensation of steam; heat diagrams, etc.

Steam Engines.—Early forms and modern developments; high-speed engines; efficiencies of non-condensing; condensing, simple, compound and multiple expansion, stationary and locomotion types; steam jacketing and superheating.

Steam Turbines.—The de Laval turbine; compound impulse turbines; reaction turbines; combined types; effect of high pressure, super heat and vacuum, governing.

Internal Combustion Engines.—Gas, Oil and Petrol.

ELECTRICAL TECHNOLOGY I AND II.

(MECHANICAL AND ELECTRICAL).

Electric and magnetic laws, units, standards.

Electric and magnetic properties of materials.

Electric and magnetic circuits.

Electric and magnetic measurements.

Measuring instruments and their calibration. Alternating currents including polyphase currents, elementary theory. Continuous and alternating current generators, motors and transformers; simple theory, working and construction. Tests by direct

and indirect methods. Transmission and distribution of electric energy; relative efficiencies of various systems; choice of voltage, cables and conductors; general methods of erecting or laying and insulating. Electric lamps and illumination. Primary and secondary cells; elementary theory and testing.

PRINCIPLES OF ELECTRICAL MACHINERY, I AND II.

Theory, details of construction, predetermination of performance, testing and analysis of losses of the following continuous and alternating current generators and motors. Rotary and motor converters. Transformers.

MACHINE DRAWING AND DESIGN.

Design and details of direct and alternating current generators and motors. Drawings of principal components of electrical gear, power and wiring diagrams.

ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS.

Electrical units and standards. Elements of electro-static and electro-magnetic theories. Calculation of (1) electro-static capacity of systems of charged conductors, (2) magnetic field strength due to systems of currents, (3) self and mutual inductance of coils. Derivation of the C.G.S., electro-static and electro-magnetic units and their dimensions. International units and standards. Absolute measurement of the international ampere and ohm. Standard cells. Standards of luminous flux, candle power and illumination.

Alternating current theory.—Symbolic vector methods and complex quantities and their application to practical cases, i.e., polyphase circuits and alternating current networks. Harmonics and single and polyphase circuits. Eddy current. Losses in conductors. Properties of rotating fields. Simple cases of transient phenomena.

Methods of electrical measurement.—Theory and practice of modern test methods for the measurement of electric and magnetic quantities. Theory of Galvanometers. Ballistic tests: flux meters, electrometers, continuous current and alternating current, potentiometers, standard dynamometer. Wattmeters, and electro-static Wattmeters. The wheat-stone bridge, including precision modifications. Measurements of high and low resistance. Alternating current bridge measurements of effective resistance and reactance. Detectors, including vibration, galvanometers; errors at high frequencies. Frequency measurements. Oscillographs for high and low frequencies. Measurements of magnetic properties of materials. Iron loss measurements by Watt meter and bridge methods. Measurements of dielectric properties. Measurements of luminous flux, candle power and illumination. Electrical methods of measuring temperature.

POWER AND DISTRIBUTION.*Generation, transmission and utilisation of power.*

(a) *Generation*.—Choice of site of station; the various determining factors. The choice of prime movers and the choice and arrangement of plant generally. Economics of power generation. Switching and control of generators. Batteries and boosters. Switch gear; direct and remote control systems, regulating and protective devices; Instruments; synchronising apparatus. Typical power plants, including hydro-electric schemes.

(b) *Transmission*.—Systems available for the transmission of power by continuous and alternating currents. The applicability of each to various conditions. Cables and aerial lines; laying, jointing and erection.

Economics of power transmission; determination of the most economical system for given conditions; distribution of losses, approximate calculations of drop, power, factor, and conditions determining resonance; factors limiting the voltage in practice. Influence of power factor on transmission problems. Interference with communication circuits. Mechanical calculations relating to aerial lines. Systems of distribution; net work calculations. Choice of feeding points; sectionalisation of net works. Sub-stations; necessity for, types available, functions of and arrangement of plant. Switch gear. High and low pressure and for special purposes. Protective systems. Lightning arresters and other safety devices. Localisation of faults.

(c) *Utilisation (excluding electric traction)*.—The advantages of electrical systems of transmission and utilisation of energy in industrial work. Selection of motor, continuous or alternating for given services; load equalisation. Speed control and regulation: special arrangement for heavy and variable torques. Automatic and semiautomatic systems. The production and measurement of light. Use of electric energy for illumination. Illumination required in given circumstances. Types of lamp, and fittings available, their choice and arrangement; calculation of illumination from total luminous radiation, effects of reflection. Reflection and absorption; calculation of power required: relative advantages of various systems; systems of charging for electric energy; principles and calculations involved.

APPENDIX XI.

L.T. DEGREE EXAMINATION.

The following syllabuses for the subjects of the Examination have been prescribed:—

THE THEORY AND PRACTICE OF EDUCATION.

A

Physiology in relation to child and school hygiene. Study of the human organism: the different systems of the organism; the diseases of each and their prevention; unhygienic habits and their results; responsibility of the teacher; medical inspection; the function of the teacher in this connection. Physical growth of the individual and the physiological changes characteristic of each stage of development; physical culture, and games. Environment of the child: school buildings, furniture, sanitation, playgrounds—consideration of the new psychology in this connection.

B

Psychology in relation to the child and his development. The physiological basis of mental life. The mechanism of reaction: stimulus and response. Heredity and environment. Instincts. The senses: the purpose and methods of sense-training. Development of intellect: sensation, perception, conception, apperception, memory, association, imagination, reasoning and judgment. The emotions. Volition; the question of freedom. Individuality. Stages of mental development. The laws of learning. Imitation, play, habit-formation, attention, interest and effort. Fatigue, physical and mental. Intelligence testing; its purpose and achievements. The Group mind. Suggestion. The Unconscious in education.

C

Principles and methods of instruction, organisation and discipline in schools. Ideals and aims in education. Principles of the curriculum. The question of formal training. Correlation in teaching. The logical and psychological order. Factors and methods in the training of thought; analysis of a complete act of thought. Methods of discovery, verification and proof. Definition and its place in education. The place of language in education. Technique of teaching: inductive and deductive development; exposition and illustration; discussion and questioning. Individual and group work. Exercises. Testing, old and modern

methods; reports; examinations. The grading of pupils. Timetables: sequence of lessons. Homework; its purpose and organisation. The promotion of corporate school life; school societies, prefects, out-of-school activities: games; Scouts and Guides; leisure time and hobbies. Discipline, its nature and meaning; its relation to character and self-control; the question of punishment, out-of-school influences; co-operation between home and school.

The subject for Special Study for 1938.

"Statistical Methods Applied in Educational Research".

Syllabus in Statistical Methods Applied in Educational Research.

1. *Statistical Science.*—

Its nature and scope. Statistics as a mode of thinking and as a specific tool. Importance to persons concerned with education—teachers, investigators, administrators, etc.

Traditional and modern methods of approaching educational problems.

2. *Identification and Formulation of Educational Problems.*—

Psychological problems: Stimulus and response, fatigue, hearing, verbal memory; intelligence, achievement, defective children, supernormal children, etc.; classification and grading.

Physical problems: Height, weight, sleep, cleanliness, social grade, environment.

Financial problems: Number of pupils and grades, financial needs.

Administrative problems: Distribution of schools, teachers and pupils.

3. *Data.*—

Kinds of data, primary and secondary. Units and types of series.

Collection of data. Criteria to be satisfied, *e.g.* number, representativeness.

Errors: absolute and relative. Biased and unbiased errors. Errors in educational measurements.

4. *Presentation of data.*—

Arrangement of data: Tables, charts: Their construction, scope and value.

Pictorial representation. Diagrammatic representation, linear, areal, volumetric.

Classification of data: frequency tables, individual, groups. Accumulated frequencies.

Graphical representation: histogram, frequency polygon, frequency curve, cumulative frequency curve. Fundamental notion of chance. Normal probability curve.

5. Statistical Measures.—

- (i) Averages. Mean (arithmetical average). Weighting. Median. Mode.
- (ii) Variability or dispersion. Significance. Measures of dispersion: Range, mean deviation, standard deviation.
- (iii) Quartiles, deciles, percentiles. Cumulative frequencies and ogives. Quartile deviation.
- (iv) Skewness: its meaning and significance.
- (v) Reliability, probable error. Comparison of data with the help of statistical measures.
- (vi) Correlation: meaning. Types of correlation: simple partial, multiple. Scatter diagram. Correlation coefficient, its meaning and use. Formulae for calculation.

N. B.—The course should be developed wherever possible on the basis of practical work with significant data, with special reference to Indian conditions. Ability to interpret results and conclusions, and development of a critical attitude, as important as practice in computation. The course should not require knowledge of Mathematics higher than that of the Matriculation standard.

6. Sources for Statistical Data.—

Quinquennial Reports on Education (Commissioner of Education, local and provincial.)

Annual reports on the mental and material progress of India (Director of Information).

Sadler Commission Reports.

Report of Hartogg Committee.

7. Books Recommended.—

Elderton: A Primer of Statistics.

Rugg: A Primer of Graphics and Statistics for Teachers.

Thurstone: Fundamentals of Statistics.

Gregory: Fundamentals of Educational Measurement with Elements of Statistical Method.

Tiegs and Crawford: Statistics for Teachers.

D (i)—ENGLISH.

I. General.—Objects of teaching English—its practical and cultural values. The position of English in India; the bilingual problem and its implications—(a) English as a medium of instruction, (b) high standard of attainment, (c) colloquial as well as literary English.

II. *Methods of Teaching*—

- (a) The translation method of teaching English in India; its defects, comparison of English and Indian languages. Traditional method of language study.
- (b) The Reformed method. Its meaning, object and importance in relation to the aim of teaching English. The inhibition of the mother tongue as far as possible; the foreign tongue the medium of instruction. Results: fluency of expression, oral and written.

III. *Oral work*.—Its prominence in the initial stages.

- (a) Phonetics. The value of phonetics; its importance to teachers in English; the value of phonetic drill.

The sounds of English: detailed study of their production; comparison of English and Indian sounds. Methods of teaching:—(1) phonetic drill, (2) apparatus, (3) use of phonetic symbols. Value of phonetic texts (1) for teachers, (2) for pupils.

- (b) Conversation: precedes reading.

Subjects: Class-room objects, persons, actions, pictures. Conversation between pupils. Importance of repetition.

IV. *The Text*.—The centre of instruction; extent to which digression is desirable. Methods of explanation: use of objects, actions, gestures and pictures. Forms of verbal explanation—the apperceptive principle; the use of mother tongue, extent to which it may be used. Importance of study of language; drill in word and phrase; oral composition; means of extending vocabulary—word and phrase books—their arrangement. The requisites of a good reader; consideration of existing readers.

English life (customs, society, schools, etc.) stage at which to introduce; consideration of difficulties; contrast between conditions of Indian pupils and, *e.g.*, French pupils in this respect.

Elementary study of diction in texts. Choice of words; prose and poetic diction; attention to concrete expression; rhyme and metre.

Intensive and extensive reading. The function and treatment of non-detailed texts. Creation of interest in reading. The importance of silent reading. The formation and use of class libraries.

Reading aloud and recitation from texts—pronunciation, punctuation, phrasing, intonation, stress.

V. *Grammar*.—Distinction between grammar common to all languages and the grammar of a particular language. The need for uniformity in grammatical terms in English. The place of grammar in the reformed method of language teaching. Inductive methods; correlation with texts. The function and form of words; word order; sentence structure; importance of analysis. Grammar summaries and framing of rules. Grammar drill. Framing of grammar syllabuses. The medium of instruction.

VI. *Hand-writing*.—Outline of work in initial stages—writing charts, copy-books; transcription from texts; spelling; dictation. Importance of punctuation; syllabification in writing, difficulties arising from vernacular practice. Attention to hand-writing in exercise books, note-books and composition.

VII. *Composition*.—Correlation with texts, grammar and word-lists. Progress from reproduction to free composition; importance of oral work. Story reproduction; use of pictures; use of texts; correlation with other subjects; current events. Types of composition; (a) Essay—narrative—descriptive, etc., (b) Letter-writing, (c) Epitome, (d) Expansion, (e) Paraphrase. Translation; principles of translation; stage at which it should be introduced.

The construction of the essay—principles of sentence and paragraph structure. Oral and written preparation essential. Correction and valuation of written exercises. The difficulty of large classes.

VIII. Organisation of English teaching in schools. Timetables, free and rigid. Schemes of work; syllabuses. Notes of lessons; note-books. Class-rooms. Libraries.

D (2) (a)—CHILD EDUCATION

I. Principles and methods of Child Study.

History of Child Education with special reference to Rousseau Pestalozzi, Froebel and Montessori.

Experimental observations; physiological considerations; the child's instincts.

Stages of child development—study of exceptional children and methods of dealing with them.

Mental Intelligence Tests.

II. A survey of recent experiments in methods of child education.

Theories of play and play methods: Importance of play in the development of the child. Free and organised play: consideration of the choice of a child's play-things and occupation materials.

III. Self-activity, continuity, connectedness and creativeness as guiding principles in early education.

IV. Sense training; its importance in the teaching of

(a) Language, number and space.

(b) Natural interests.

(c) Class singing with special emphasis on rhythm; Simple eurhythmics.

(d) Drawing and handwork.

(e) Story and dramatisation.

V. Correlation in the teaching of the various subjects, in the framing of syllabuses and time-tables and in the application of the project method.

VI. Environment. Fatigue. Discipline.

D (2) (b)—MATHEMATICS.

i. *Mathematics and Mathematical knowledge.*—The nature and scope of mathematics; its relation to other branches of knowledge, *e.g.*, physical and natural sciences, logic, philosophy, economics. Value of mathematical education: practical and cultural.

The development of mathematical knowledge by empirical, intuitional and rational processes. Working knowledge *versus* knowledge of principles underlying processes.

The fundamental concepts of elementary mathematics in relation to teaching.

ii. *History of Mathematics.*—The value of the study of history of mathematics and mathematical teaching: History of the important topics of elementary mathematics, *e.g.*, notation, metric system, directed numbers, function concept, parallel postulate.

Contribution to the pedagogy of mathematics by eminent educators, *e.g.*, Froebel, Herbart, Montessori.

Methods of mathematics—the scientific, deductive, intuitional and creative.

Modern tendencies in the teaching of school mathematics.

III. *Methods of Teaching Mathematics*.—The heuristic and laboratory; synthetical and analytical; inductive and deductive; genetic and other methods, singly or in combination.

Experimental and practical mathematics. The organisation and functions of mathematical laboratories. Outdoor work.

Means of securing speed and accuracy in mathematical work. Oral and written work.

IV. *The content and organisation of school mathematics*.—Organisation of school mathematics, primary, lower and upper secondary. Compulsory and elective courses.

Curriculum construction. The psychological *versus* logical order of development. The concentric *versus* the continuous development. The syllabus and assignments.

Separate treatment of Arithmetic, Algebra and Geometry *re* aims of teaching, position in the curriculum, organisation of subject-matter, methods of teaching, etc.

Correlation of Arithmetic, Algebra and Geometry and of Mathematics with other school subjects.

A detailed study of the Madras S.S.L.C. and Matriculation syllabuses in elementary and optional mathematics.

Mathematical libraries. Students' associations.

V. *Problems bearing on the conduct of mathematical work*.—The medium of instruction.

Text-books: their place and value. A critical study of text-books.

Notes of lessons and teacher's records of work.

Individual, group and class teaching. The Dalton plan; supervised study of Mathematics.

Problems and problem solving. Project method. Collection of data for problems. Indigenous methods of calculation.

VI. Examinations, valuation of answers. Modern tests. Standards of achievement. Treatment of errors.

Fundamental notions of statistical averages and correlation as applied to educational problems.

D (2) (c)—PHYSICAL SCIENCE.

Aims of science teaching—the acquisition of useful knowledge by discovery; and exposition of the scientific or laboratory method of training. Methods not the verification of previously known facts, but finding out by means of experiment; learning by doing; training in self-reliance.

Three stages—(a) observational, (b) heuristic, (c) systematic.

Two objects, the acquirement of skill and of knowledge. Intensive method; necessity of definite conceptions.

Physical Science, a sequence to elementary Natural Science. Co-ordination, and correlation with Natural Science, Mathematics, Drawing, Geography.

Didacticism opposed to the scientific method; critical appreciation of authority.

Methods of recording work, observational and experimental.

Drawing up syllabuses and laboratory courses; continuity; sequence; directiveness. Organization and fitting up of laboratory. Induction and deduction, synthesis and analysis, in their application to the study of science. Function of hypotheses and their potency in relation to science.

Historical considerations in the study of science. Place of quantitative work in a school course.

D (2) (d)—NATURAL SCIENCE.

Aims of teaching Natural Science—Acquisition of knowledge by discovery. Methods not the verification of previously known facts, but finding out by observation and experiment.

Elementary Natural Science.—a Science chiefly of observation. The teaching of Natural Science may be used as (i) a training in accuracy of observation, (ii) a training in discovery of laws governing the relationships of living things to external conditions by experimental work, and therefore of the characters of the animate world, (iii) a training in finding out the principles of classification and the relationships of families.

Combination of observational and heuristic methods of teaching. Drawing and description in relation to correct observation. Sketches to be made from the actual objects themselves.

The value of comparison.

Consideration of the characteristics of some natural orders of plants. Principles of classification with special reference to Botanical system of classification. Natural and artificial systems of classification.

Arrangement of apparatus for experiments; Conducting experiments. Selection of specimens for different lessons. Value of living specimens. Necessity for an acquaintance with dried specimens to a certain extent.

The value of school museum. Fitting up and maintenance of a school museum. Necessity for observing economy in maintaining a school museum. Methods of preserving and labelling specimens. Value of photographs. Use of the projection lantern.

School herbarium. Selection of plants for the herbarium. Methods of preparing herbarium specimens. Encouragement of the collection of specimens.

Value of a school garden and of excursions.

D (2) (c)—HISTORY.

1. *The Meaning of History*.—Considered as (i) a Philosophy, (ii) a Science.

2. *Scope*.—The subject-matter of history—its branches, social, political, economic.

3. *The Value of Historical Study*.—

(a) Cultural—study of human nature; breadth of outlook.

(b) Practical—a school of citizenship.

(c) Ethical—training of character; instrument of moral training; patriotism.

(d) Mental training—mental processes involved—analysis, classification, generalisation, comparison, criticism, judgment.

4. *Aims of Teaching*.—

General—

(a) To develop a historical sense—the creation of interest in the past and understanding of the present.

(b) To secure the intelligent use of books and training in individual work.

Special—

Early stages.—To create interest and develop imagination.

Later stages.—To train the intellect; logical, critical, selective and descriptive powers.

5. *The Subject Matter*.—

(a) Principle of selection for early and later stages—psychological—logical.

General, national and local history; ancient and modern history.

- (b) Organisation: Concentric and periodic systems; outlines and special periods. Chronological and topical treatment.
- (c) Correlation with other subjects, *e.g.*, Civics, Geography, Literature.

6. Method—

General—

- (a) Oral teaching: logical series of questions with definite aim essential; teaching as opposed to lecturing.
- (b) Use of text-books; emphasis and expansion of important points; selection of topics.
- (c) Preparation: notes; bibliography; maps and charts.
- (d) Supervision of individual work in class as opposed to dictation of notes.

Special—

Early stages.—Narrative, biography, ballad; dramatisation, illustration; maps; museum; excursions.

Later stages—

(i) *Class work:*

Oral teaching—its importance; questioning to test memory and provoke thought; analogies and illustrations; maps, charts, pictures, models. Museum; excursions.

(ii) *Individual work—*

- (a) The text-book: its use at home and in class; characteristics of good and bad text-books.
- (b) Collateral reading: its purpose; assignments and guidance.
- (c) Study of sources: method; value; limitations.
- (d) Maintenance of note-books.
- (e) Problems and exercises.
- (f) Preparation of maps, plans and charts with reference to (a) time, (b) causal relations.

7. *Preparation of Courses of Study.*—*Syllabuses:* schemes of lessons; critical study of schemes in use.

8. *The medium of Instruction in Indian schools.*

9. *Laboratory work in History.*—Its value, possibilities and limitations; requisities, library, source books; equipment; study hours, assignments.

10. *Examinations in History.*—Oral and written; their aims and value. Standard tests. The valuation of papers.

D (2) (f)—GEOGRAPHY.

1. Scope of modern geography, its essential principles and larger problems. A brief historical sketch of the growth of modern Geography, and its pedagogy.

2. The scope and purpose of Geography in schools, its educational value and its relation to the other subjects of the curriculum, *e.g.*, Science Subjects, Mathematics, History, Drawing, Hand-work.

3. The organization of courses of study and the construction of syllabuses, with special reference to the following:—

- (a) the environment of the school (rural or urban);
- (b) the type of the school (secondary or elementary);
- (c) correlation with the courses in other subjects;
- (d) the value of descriptive and argumentative Geography at different stages in the course;
- (e) the position of physical, economic, historical and regional (including home) Geography in a scheme of school work;
- (f) the value and possibilities of practical work including map drawing and elementary cartography, observational work, out-door work and excursions and quantitative work.

4. Preparation, organization and conduct of lessons, types of lessons, causal relation and the place and value of geographical explanations. The adaptation of teaching of Geography to systems of auto-education or laboratory methods.

5. **Examinations and test papers.**

6. Sources of geographical information and collateral reading.

7. Geographical equipment and its use.

D (2) (g)—SANSKRIT.

(a) *General: Preliminary.*

Objects of teaching Sanskrit. The standard to be aimed at in Secondary Schools and Pre-collegiate Sanskrit Schools. The position of Sanskrit in India; its cultural and practical value.

The inter-relations of Sanskrit and Indian vernaculars. Comparison of Sanskrit and English, with particular reference to their grammar and structure. Practical and theoretical study of Sanskrit.

(b) Methods of Teaching.

The translation method and the direct method as applied to Sanskrit study; traditional methods of Sanskrit study—their merits and defects, the external and internal difficulties of the Sanskrit language and how best to overcome them.

(c) The Early Stages of Sanskrit Teaching.

The sounds of Sanskrit, detailed study of their production, the organic and acoustic methods of studying Sanskrit sounds. The means of teaching them to pupils. The teaching of Sanskrit handwriting; the place of dictation and transcription; translation. Reading and recitation. The Sanskrit text as the centre of instruction; manner of exposition, means of extending the Sanskrit vocabulary. Inductive methods of Sanskrit teaching. Sanskrit Grammar. The use of Sanskrit *Kosas*.

(d) The Later Stages.

The choice of Sanskrit texts. Lines of development in teaching the various aspects of Indian life. Correlation with the Geography and History of India. Correlation with the History of Indian civilization and culture. Study of diction in Sanskrit texts; types of Sanskrit Composition. Sentence structure in Sanskrit. Paraphrase and translation with reference to Sanskrit. The Historical and Comparative Methods of studying the Sanskrit Language and Literature. Study of Organization of Sanskrit teaching in English schools; consideration of time-tables; formation of class libraries and general libraries.

D. (2) (h) HOUSEHOLD (DOMESTIC) SCIENCE.

A.—I. The meaning and scope of the subject and its relation to the general scheme of education.

II. *Aims and methods of teaching* :—place of the following : the lecturing or didactic methods ; questioning ; individual investigation, assignment or experiment ; practical application ; demonstration.

III. *The scope of subject matter to be taught in School*, and its further possibilities beyond existing courses : the place of the following :—nutrition and dietetics, cookery, laundry work, housewifery, child welfare,

home-nursing, bacteriology, hygiene. Chemistry and Physics of household science.

- IV. *The organization of schemes of work*:—relation to social conditions of the pupils and to natural products and conveniences of the district; effect of age on subject matter; connection with other school subjects; types of courses.

Organization of lessons—time factor, relation of theory, demonstration and practice; written work by the pupil, home work; notes of lessons.

Class organization—individual work, group work. Essential features in the organization of demonstration and practical lessons.

- V. *Aids to teaching*—illustrative material, bulletin boards, microscope, text-books, instruction sheets, sources of information and reading, excursions.

VI. *The Laboratory plan* and minimum equipment.

VII. *Management of stores* and equipment.

VIII. *The place of the Household Science Teacher in the general school organization* (her responsibility regarding the school drinking water, sanitation, etc.).

(N. B.—Minimum essentials required for all students).

B.—I. *Science as applied to the Home*.—

- (a) *Chemistry of foods*:—Detailed study of chemistry of carbohydrates, proteins, fats and minerals by means of experiments, etc. Simple rough analysis of common food stuffs. Salivary and gastric digestion in a test tube.

- (b) *Chemistry of washing clothes*:—Chemistry of water, soaps, of textile fabrics. Action of acids and alkalies on materials.

- (c) *Chemistry of Household materials*:—Some characteristics of common household metals: iron, copper, brass, aluminium. Chemistry and nature of rust, tarnish, verdigris, etc.

II. *Nutrition*:—Food and Health—energy requirements of adults in Indian foods which control growth and health, mineral constituents, Vitamins. Dietary standard for adults. Nutrition at the beginning of

life. Changing requirements of the expectant and nursing mother. Nutrition through the period of growth; the toddler and school age. Feeding the family and planning diets. Budget making, account keeping. The deficiency diseases of India.

- III. *Cookery*:—Indian and English weights and measures. Modes of heating foods in cooking. Reasons and problems of cooking methods. Choice of foods. Choice, use and care of utensils and apparatus. Study of structure and composition of food in relation to various methods of cooking.

Practical work:—Preparation of beverages and liquid foods. Cooking cereals and vegetable foods—Use of leavening agents; sugar; boiling; cooking leguminous vegetables, eggs and milk, flesh foods and fish. Preserving foods.

IV. *Bacteriology and Hygiene*:—

- (a) *Bacteriology*:—The morphology of bacteria. Yeast and mould. Their general function in nature and in the home—their relation to disease—their relation to preserving food.

Hygiene Excursions:—to a bakery and a brewery if possible.

- (b) *Maternity and child-welfare*:—Necessity for infant welfare work. Cause of high infantile and maternal rates in India. Study of welfare scheme in local areas. Pre-natal work—maternity and child welfare centres, creches. Natural and artificial feeding. Development of the child. The normal and abnormal child. Evils of marriage of the diseased and the feeble minded.

Hygiene Excursions:—to welfare clinics, nursery schools, hospitals, etc.

- (c) *General Hygiene*:—Sources of water supply—purification in home, school and community. The removal and disposal of refuse. Ventilation. Care of home.

Hygiene Excursions:—to water works, model housing schemes, sewage works, markets, etc.

- (d) *Infectious diseases*:—Nature of infection and method of spread, carriers of diseases; animal parasites—susceptibility—immunity—vaccination, anti-toxins, etc. Notifiable diseases. Disinfection.

V. *Economics of the Household*:—

Money-earning activities of the home; budgeting and simple account-keeping. Beauty in the home.

Choice and care of clothing—removal of stains—knowledge of equipment necessary—methods suitable for various types of homes—Laundry materials—including study of indigenous material. Treatment of fabrics—cleansing—stiffening, drying.

Excursions:—Visits, if possible, to be arranged to cotton, silk and wool mills. To dobhis village or public wash house—soap factory—Spencer's Laundry, etc.

APPENDIX XII.

SYLLABUSES FOR THE B.Sc. DEGREE EXAMINATION IN AGRICULTURE.

NEW REGULATIONS.

Agriculture.

FIRST YEAR.

Metcorology:—Air movements, wind currents, monsoons, rainfall, climate, factors which influence climate, influence of climate and seasons on farming. Weather charts and forecasts.

Relation of Science to Agriculture:—Soils. Formation, weathering agencies, soil, sub-soil, soils of the Madras Presidency. Relation of soils to temperature. Effect of latitude, aspect, colour and incorporation of organic matter on soil temperature. Relation between soil temperature and plant growth.

Tillage, necessity, methods, effects.

Farm implements and machinery. Ploughs, cultivators, harrows, grubbers and rollers, drills, hoes, harvesting tools and machinery, winnowing and thrashing machines, chaff cutters, sugar mills, and power cultivation.

SECOND YEAR.

Manures:—Principle of manuring, classification of manures; farm yard manure, sheep manure, dung of horses and pigs, fish manure, guano, bones, bone-meal, soot, dried blood, slaughter house refuse, night-soil, poudrette, sewage, oil-cakes, green manures, compost, old village site earth. Preparation, preservation, use of the above manures, fertilisers. Lessons learnt from manurial experiments at research stations, chiefly Rothamsted.

Soil fertility, soil improvement:—Drainage, soil reclamation, maintenance of fertility, fallows, rotations, mixtures.

Irrigation:—Importance, irrigation sources, rivers, tanks, catchment areas, capacity, irrigation works, management of irrigated lands, water lifts, duty of water, effects on tracts irrigated.

Crops.—Classification, cereals, pulses, oil-seeds, sugarcane, fibres, dyes, spices, drugs, narcotics, fodder crops, fruits and vegetables, miscellaneous crops of the Presidency. Coconut, palmyra and other trees of economic importance. Market gardening, pastures, hay and silage. Hill crops. Cultivation of the crops named above and their preparation for the market. Selection of seed; preservation and storage, drying, steeping, fumigation.

PRACTICAL WORK.

For First and Second year.—

The students will undergo practical training in all branches of farm work. Each student will himself cultivate small plots in wet, dry and garden lands, and will be taken on tours and excursions to representative agricultural tracts. Every student will maintain a record book for each item of work specified.

THIRD YEAR.

Animal Husbandry (including dairying):—

Cattle:—Their importance to the farmer; Principles of breeding; breeds of cattle, breeding tracts in the Presidency, feeding and rearing, rations, value and costs. General management, rearing of calves.

Sheep, goats, poultry, and pigs. Chief breeds, feeding and management.

Dairy cows:—Feeding, management, breeding, dairy products, milk, properties, composition, treatment, disposal, *cream* separation, curdling of milk, starters, skim milk, butter and ghee, their preparation.

Dairy Economics:—Equipment, building, machinery, disposal of products.

Agricultural Economics:—1. *Farm management*. Location and laying out of farms, farm equipment, buildings, tools, implements, machinery, labour, human and animal, distribution and management.

Disposal of manures and farm produce.

System of farming. Cost of cultivation of crops.

Valuation of land and crops. Farm accounts.

2. *Economics*:—(a) Scope of economics, general principles, current economic theories, basis of economics, wants, satiability.

(b) *Consumption*.—meaning and types, demand, utility, value, wealth.

(c) Production, factors, natural forces, land, labour, capital, law of diminishing returns.

(d) Organisation, efficiency, specialisation, units, co-operation, credits.

(e) Distribution, supply, demand, price and value, costs, market transportation, profits, land tenures, rent, leases, wages, insurance.

Agricultural experiments, objects, scope, methods, calculation of experimental error, interpretation of results.

PRACTICAL WORK.

Students will have practical training in all branches of animal husbandry including management, health and care of animals, and in dairying and dairy-farming and separation of milk, preparation of butter and other milk products. They will visit villages in the neighbourhood and make enquiries on rural subjects. They will do library work to supplement their lectures and to get familiar with current literature. They will also have tours and excursions. Each student will maintain records of work done and of observations made.

Botany.

FIRST YEAR.

Morphology and classification:—The external morphology of the following parts:—Root, stem, leaf, flower, fruit and seed. The general principles of classification and the distinguishing characteristics of the following families:—Malvaceæ, Leguminosæ, Cucurbitaceæ, Rubiaceæ, Compositæ, Solanaceæ, Amaranaceæ, Euphorbiaceæ, Scitamineæ, Gramineæ.

Histology:—Cell structure, cell division and cell contents. The origin, nature, and development of plant tissues. Primary and secondary tissues and their distributions in the plant body.

Physiology:—Absorption of water and gases and their movement in the plant. Photosynthesis and the synthesis of proteids. The essential and non-essential elements of plant food. Translocation and storage of food materials and their digestion. Enzymes and their action. Respiration. Sources of energy in plants. Special modes of nutrition. Growth, movement and irritability in plants. Reproduction.

PRACTICAL WORK.

Students will examine and describe plants of the families or groups specified in the syllabus, make dissections and drawings of the various parts of plants and prepare sections for the microscope so as to illustrate their structure.

SECOND YEAR.

Ecology:—External factors and their influences on the plant. Distribution of plants and the factors governing the same. Types of vegetation—Xerophytes, Mesophytes, Halophytes, Hydrophytes.

Crop Botany:—The cultivated plants and their origin. Differences between cultivated and wild plants. The important crops of India, their geographical zones and distribution. The morphology, histology and physiology of the cereals, pulses, fibre plants, root crops, vegetables, oil-seeds, grasses and fodder crops, and the chief industrial and economic crops under cultivation. Diagnostic characters of species and sub-species of each crop.

Vegetative and sexual reproduction. Cross- and self-fertilisation. Weeds, identification and principles of control, seed testing. Recognition of the seeds of the common weeds and crop-plants.

PRACTICAL WORK.

Candidates will examine the common weeds growing in cultivated fields and their seeds, will recognise, describe and refer to their families crop plants and dissect and prepare sections to illustrate their structure under the simple and compound microscopes.

THIRD YEAR.

Horticulture:—Economic and agricultural aspects of growing fruits and vegetables. Fruits, kinds and varieties. Stock. Preparation of land, laying out and planting. Pruning, budding and grafting. Spraying. Vegetables, kinds and varieties. Seed-beds and transplanting. Seed growing. Selection of mother plants and rouging.

Genetics and Plant Breeding:—Theories of evolution, variation and origin of species. Methods of improvement of crops. Pure lines. Mendelism, principles of heredity and their application to the breeding of improved forms of farm crops. Genetics of farm crops, Rice, Chulam, Ragi, Cotton, Sugarcane, Tobacco, Groundnut, etc. Elements of Cytology. Chromosome theory of heredity. Phenomena of linkage and crossing over. Hybridisation, intervarietal, interspecific, and intergeneric. Self- and cross sterility. Inheritance of and breeding for disease resistance.

Cryptogams:—The main points of structure, development and life history of the following:—

Blue-green and green Algæ, Liverworts, Mosses and Ferns.

Mycology:—The structure of fungi, their modes of nutrition and reproduction. Dissemination of fungi and infection of host plants. Effect of fungi on host plants. Methods of control of plant diseases. Classification of fungi and the characters of the main groups. Diseases of crops.

Practical:—In Horticulture candidates will be given practice in pruning, grafting, and budding in fruit trees and flower shrubs. In Genetics course candidates will be taken to the breeding stations and made to examine simple and complex Mendelian ratios. In Mycology they will observe the simple laboratory methods of examining a diseased plant, plating and culture, and simple infection experiments.

Chemistry.

FIRST YEAR.

Organic Chemistry:—Isolation, purification and analysis of organic compounds. Determination of molecular weights.

712 SYLL. FOR THE B.Sc. DEGREE EXAMINATION [APP. IN AGRICULTURE.

Classification. Compound radicles. Open and closed chains. Saturated and unsaturated compounds. Homologous series. Empirical, molecular and constitutional formulæ. Isomerism, metamerism and polymerism. Hydro-carbons, Methane, Ethane, Ethylene and Acetylene.

Halides—Methyl and ethyl halides. Chloroform and iodoform.

Alcohols.—Monohydric alcohols. Primary, secondary and tertiary alcohols. Distillation of wood and Methyl alcohol.

Alcoholic fermentation and ethyl alcohol.

Ethers.—Sulphuric ether.

Aldehydes and Ketones. Acetaldehyde and Acetone.

Fatty acids—Formic, acetic, propionic, and butyric acids.

Derivatives of acids—Acetic anhydride, acetyl chloride, acetamide and amino-acids.

Esters.—Halogen Esters. Ethyl nitrate. Nitro paraffins, Ethyl hydrogen sulphate. Esterification.

Amines.

Glycols.—Ethylene glycol.

Glycerols.—Fats and oils.

Dibasic acids.—Oxalic, malonic and succinic acids.

Hydroxy-acids—Glycollic, lactic, malic, tartaric, citric.

Nitrogen derivatives—Cyanides and urea.

Carbohydrates—Glucose, levulose, sucrose, maltose, lactose, dextrin, starch and cellulose; preparation, properties, general reactions. (To be treated in an elementary way).

The aromatic compounds—Benzene and its chief derivatives—Phenols. Benzaldehyde. Benzoic acid. Nitro-benzene. Aniline. Salicylic acid. Napthalene, Anthracene.

Practical:—Reactions of bases and acids of common occurrence and of agricultural importance.

Qualitative analysis of mixtures of two bases and two acids.

Characteristic reactions of carbohydrates. Identification of the common organic acids—acetic, oxalic, formic, citric and tartaric acids.

SECOND YEAR.

Agricultural Chemistry.

Soils, origin of soils. Rocks and rock-forming minerals met with in South India. Elementary geological structures. Geological formations of South India. Soils derived from them.

Different soil types of the Madras Presidency. Red, black-cotton, laterite, sandy, alluvial and peaty soils.

Proximate constituents of the soil—sand, clay, lime and Humus. Physical properties of the soil, pore-space, internal surface, specific gravity, tenacity, colour,—flocculation, deflocculation and tilth.

Mechanical analysis of soils—hydraulic and sedimentation methods; interpretation of results.

Relation of soil to temperature.—Factors affecting soil temperature.

Soil Airs.—Nature of the gases produced under aerobic and anaerobic conditions.

Relation of soil to water. Transpiration ratio, retention of water, surface tension, percolation and drainage, drain-gauge, Upward and lateral movement of water in soils, evaporation.

Chemical analysis of soils.—Dormant and available plant food. Analysis of typical South Indian soils; interpretation of the results.

Retention of bases and acids.

Soil reaction:—General notions of Hydrogen-ion concentration.

Alkaline and acid soils. Injurious salts and limits of toxicity. Methods of reclamation. Soil surveys with special reference to Madras Presidency.

Biological action in soils.—Break-down of carbo-hydrate and protein material in soils.—The carbon and nitrogen cycles.

***Plant Chemistry.*—**

Tannins.

Glucosides. Cyano-genetic glucosides.

The Alkaloids—Occurrence and general reactions and properties. The Proteins.—General reactions and characteristics. The Chemistry of the Plant. Essential elements and their functions. Proximate constituents.

Chemical changes occurring during germination and growth.

Photo-synthesis. Enzymes and their action. Analysis of plants and the general composition of South Indian crops.

Practical:—Volumetric analysis.—Standard solutions. Acidimetry and alkalimetry.

Volumetric determinations involving the use of standard solutions of silver nitrate, permanganate and iodine and thiosulphate.

714 SYLL. FOR THE B.Sc. DEGREE EXAMINATION [A.F.F.
IN AGRICULTURE.

Gravimetric estimations. Fe, Al, SO_4 , Cl, CaO, MgO, K_2O , P_2O_5 .

Mechanical and chemical analysis of soils.

Characteristic reactions of alkaloids.

Examination of the common fats and oils and detection of adulteration.

THIRD YEAR.

Agricultural Chemistry:—Manures. Necessity for manures. Soil exhaustion. Minimum cropping value. Limiting factors. Classification of manures. The chief nitrogenous, phosphatic and potassic manures, their manufacture, application and modes of action. Farm yard manure, green manure and other manures of South India. Analysis and valuation of manures.

Chemistry of foods and feeding:—Composition of the animal. Fodders and feeding stuffs, and their composition and analysis. Digestion and absorption. Functions of the different nutrients. Digestive Co-efficients.

Nutritive ratios. Calorific values. Starch equivalents.

Formation of flesh, fat, and milk.

Feeding standards. Calculation of rations. Manurial values of food. Vitamins.

Dairy Chemistry:—Composition of milk and milk products. Physical and chemical properties. Analysis and detection of adulteration. Bacteria in relation to the Dairy.

Hydrogen-ion concentration.

Practical:—Analysis of the more common crops of South India.

Analysis of manures, feeding stuffs and fodders.

Estimation of the important carbohydrates. Hydrolysis by acids and enzymes. Starch, sucrose and glucose. Examination of the important vegetable and animal proteins.

Analysis of milk and butter. Examination of water for irrigation purposes.

Zoology.

FIRST YEAR.

Elementary Zoology:—(A course designed to give a general view of the animal kingdom, as an introduction to Agricultural Zoology).

Theory:—The terms Biology—Zoology and Botany. The chief characters of living organisms, animals and plants, their similarities and differences. Zoology—its scope—Different aspects of study. The animal cell, its structure and functions. Evolution of tissues, organs and systems. Animals, reproduction and development. The general principles of animal evolution. Main classification of animals.

The chief features in the general structure and habits of some familiar forms from the more important animal phyla especially those including forms of economic importance.

A somewhat detailed study of the group 'insects' with special reference to their affinities, classification, life history and habits.

Practical:—Practical study of the following animals in a very elementary manner with special reference to their general external form and chief distinguishing features—Amoeba, Paramoecium, Hydra, Prawn or Crab, Spider, Butterfly, Snail, and Fish.

The external characters and general plan of arrangement of the chief internal organs as revealed by a very simple dissection of Earthworm, Cockroach, Frog, Pigeon and Rabbit.

Identification of the commoner and familiar forms among the different groups of animals and field observations, wherever possible to gain first hand knowledge of their habits and habitations.

SECOND YEAR.

Agricultural Zoology.

Theory:—The terms Agricultural Zoology and Entomology. Insects and their close allies. Insects and man. Popular and scientific methods of insect classification. Useful and beneficial insects—Silk, Lac, Honey insects, Pollinators, Parasites and Predators.

Injurious insects—Recognition of major and minor pests. General principles and factors governing increase and decrease of pests. Principles and important methods of insect control such as spraying, insecticides, fumigation. Biological methods of pest control and legislation regarding insects. The important insect pests affecting cattle and stored products. Household and disease carrying forms.

The important pests of the various cultivated plants such as cereals, pulses, oil-seeds, fibre crops, fruit trees, vegetables, palms, dyes, drugs, and narcotics, garden plants and avenue trees, etc.

Other animals of agricultural importance, such as eelworms, ticks, mites, millipedes, crabs, snails, among lower animals.

Beneficial and injurious birds and pests like rats, jackals, wild pigs and others among higher animals.

Practical:—Practical study of the external characters and mouth parts of the more important types of insects. A general knowledge of the chief internal organs of grass-hopper, cockroach, and beetles by a simple dissection. Identification of the more important insects of economic importance found in South India.

Observation, rearing and collection of insects of importance. Occasional excursions to different localities to observe insects in their haunts and insect pest outbreaks if any.

Agricultural Engineering.

FIRST YEAR.

Mensuration and Trigonometry:—Area and volumes of simple plane figures. Simpson's Rules. Trigonometrical ratios and use of logarithms.

Elementary Surveying:—Chain survey, plane table survey, Prismatic compass, traverse and plotting.

Levelling:—Instruments employed, their adjustments, and uses. Field book plotting. Easy computation of earth work, contours, block levels and tracing.

Road making:—Preliminary surveying and mapping alignment. Longitudinal and cross sections, gradients and formation. Earth, gravel and metal roads, maintenance and repairs.

Buildings:—Building materials used in the construction of simple farm buildings. Stones, bricks, limes, cements, mortars and concretes. Timber, paints and varnishes. Wood work wrought and put up in roof timbers and in doors and windows. Roofing, plastering, and flooring. Trial pits, masonry and concrete foundations, superstructure.

Drawing and estimating.—Drawing plans of simple farm buildings, culverts, etc., from specification and estimating quantities and cost including detailed data.

Practical:—Lectures on the above portions will be supplemented by practical work in surveying, levelling and simple plan drawing and estimating.

SECOND YEAR.

Hydraulics:—Wells and well sinking. Boring. Flow of water in pipes, channels and over weirs and notches.

Water lifts, picottah, mhote, Archemedian screw, Persian wheel, pumps, adaptability and installation.

Agricultural Implements:—Characters and strength of materials used in the construction of agricultural implements. The general principles in the construction of agricultural implements

XII] SYLL. FOR THE B.Sc. DEGREE EXAMINATION 717 IN AGRICULTURE.

and machinery; ploughs, harrows, drills, presses, chaff-cutters, cane crushing mill, sprayers, milk separator.

Power on the Farm:—Work, energy and power. Sources, man, animal, wind and flowing water, steam and oil engines, electric current. Efficiency, fuel and their calorific value.

Internal combustion engines.—Gas, petrol and oil engines. Principles underlying construction and working, methods of ignition, governing. Engine faults, location. Measuring B.H.P. and I.H.P. Power driven Farm Machinery. Disintegrators and decorticators, cane-mills, rice hullers, gins and tractors.

Practical:—Lectures will be supplemented by practical work in handling farm machinery and engines, and workshop practice will also be provided.

Animal Hygiene.

FIRST YEAR.

Theoretical:—Introduction and definition of common terms. Skeleton of ox and sheep. Appendicular skeleton—bones of limbs and their media of attachment: axial skeleton. Important bones of the skull, vertebræ, ribs and breast bones. Elementary anatomy and physiology of the digestive, respiratory, circulatory and urinogenital system of ruminants.

Materia medica of easily obtainable drugs. The origin, uses and doses for ruminants of the following drugs:—

Alum, ammonium chloride, aniseed, asafoetida, bicarbonate of soda, borax, boric acid, camphor, carbolic acid; carron oil; castor oil, catechu, chalk, chiratta, salt, eucalyptus oil, ganja, ginger, gum acacia, iron sulphate, linseed oil, mustard, neem oil, nuxvomica, opium, opium, oil of tar, paraffin, potassium permanganate, phenyle, saltpetre, salvolatile, sulphur, sweet-flag, tincture of iodine, tobacco, treacle, turpentine, zinc, oxide, Butea seeds, ammonium, carbonate, cresol, arrack, oleum arachis.

Practical:—Handling of cattle, sheep and goats. Methods of restraint. Signs of health and disease. Taking temperature and pulse. Dentition in ruminants.

Simple surgical operations such as bandaging, dressing and suturing simple wounds, taking blood smears, etc.

SECOND YEAR.

Theoretical:—General hygiene including construction of cattle sheds, lambing pens, ventilation, drainage, disinfection, nursing and feeding of sick animals and disposal of their excreta and carcasses.

Minor surgery. Description and treatment of inflammation, operations of castration, dehorning in ruminants, treatment of

wounds, fractures, dislocation, ulcers, sinuses, tumours, abscesses, sprains and pricked foot.

Diagnosis and treatment of common ailments in cattle—fevers, constipation, diarrhoea, dysentery, hoven, choking, coughing, abortion, retention of placenta, dropping of the womb, garget, obstruction to teat and cattle poisoning.

Contagious diseases.—Their causes, symptoms, prevention and cure, rinderpest, hæmorrhagic septicæmia, anthrax, black-quarter, sheep-pox, tuberculosis, liverrou, gid, mange, ringworm, foot and mouth disease.

Management and common diseases of poultry.

Practical:—Dispensing.—The uses of common veterinary instruments and appliances.

Operations, principles of shoeing, diagnosis and treatment of lameness in cattle. First aid in parturition cases.

List of Texts and Reference Books.

Agriculture.

(A) FIRST EXAMINATION.

Text-book—

A Short Course in Elementary Meteorology, Pick, W. H. 1927.

Reference Books—

1. Climatology, Miller, A. A., 1931.
2. Forecasting Weather, Shaw, W. N., 1911.
3. Agricultural Geology, Rastall, R. H., 1922.
4. A Summary of the Geology of India, Vredenberg, E. W., 1907.
5. Farm Implements and Machinery, Bond, J. R., 1925.

(B) SECOND EXAMINATION.

Text-books—

1. Use of Water in Irrigation, Fortier, S., 1926.
2. Agriculture—Theoretical and Practical, Wrightson, J. and Newsham, J. C., 1929.
3. The Tropical Crops, Barrett, O. W., 1928.

Reference Books—

1. Theory and Practice of Fertilisers, Bear, F. G., 1929.
2. Irrigation and Drainage, King, F. H., 1918.
3. Irrigation Practices and Engineering, Etcheverry, Volumes I—III.
4. Dry Farming, Widtsoe, J. A., 1921.
5. A Text-book of Tropical Agriculture, Nicholls, H. A. A., 1929.

(C) FINAL EXAMINATION.

Text-books—

1. Animal Genetics, Crew, F. A. E., 1925.
2. The Science of Dairying, Penlington, W. A. G., 1927.
3. Introduction to the Study of Indian Economics, Kale, V. G., 1927.

Reference Books—

1. Principles of Breeding, Davenport, E., 1912.
2. Outlines of Agricultural Economics, Nourse, E. G., 1927.
3. Madras Manual of Administration, Volume I.
4. Co-operation in India, Wolf, H. W., 1919.
5. A First Course in Statistical Methods, Gavett, E. J., 1920.

BOTANY.

Text-books—

1. Hand Book of Botany for India, by K. Rangachari. P. Varadachari & Co., Madras.
2. Strasburger's Text Book on Botany, 6th English Edition, 1930. Macmillan & Co.
3. Mendelism by R. C. Punnett. Macmillan & Co.
4. Botany of Crop Plants by W. W. Robbins. P. Blackiston, Philadelphia.
5. Fungi and Diseases in Plants by E. J. Butter. Thacker Spink, Ltd., Calcutta.

Reference Books—

1. Structural Botany by D. H. Scott, Vol. I—Flowering Plants. Vol. II—Flowerless Plants. A. & C. Black, London.
2. Principles of Genetics, by E. W. Sinnott & Dunn. Mc.Graw-Hill Book Co., New York.
3. Fungi and Plant Diseases, by Bennett. Macmillan & Co.
4. Manual of Fungus Diseases, by Heald. Mc.Graw-Hill Book Co., New York.
5. A Hand-book of some South Indian Weeds, by C. Tadulingam. Government Press, Madras.
6. Recent Advances in Plant Breeding, by H. Hunter & H. M. Leake. J. A. Churchill, London.
7. Text-book of Plant Pathology, by C. E. Owens. John Wiley & Sons, Incorporated in New York.

Chemistry.

A. ORGANIC CHEMISTRY.

Text-books—

1. Theoretical Organic Chemistry, by J. B. Cohen. Messrs. Macmillan & Co., London.
2. Organic Chemistry, by W. H. Perkin and F. S. Kipping. Chambers, Ltd., London.

Reference Books—

1. Text-book of Organic Chemistry by Holleman and Walker. Chapman & Hall, Ltd., London.
2. Organic Chemistry for Advanced Students, by J. B. Cohen, Part I—Reaction; Part II—Structure; Part III—Synthesis. Edward Arnold & Co., London.
3. Recent Advances in Organic Chemistry, by A. W. Stewart. Longmans, Green & Co., London.

B. PRACTICAL AND ANALYTICAL CHEMISTRY.

Text-book—

Systematic Qualitative Analysis, by Caven. Blackie & Son, Ltd., London.

Reference Books—

1. A Treatise on Practical Chemistry and Quantitative Analysis, by Clowes and Coleman. J. & A. Churchill, London.
2. Quantitative Chemical Analysis by Clowes and Coleman. J. & A. Churchill, London.

Soils.

Text-book —

Manual of Agricultural Chemistry by Ingle. Scott Greenwood & Sons, London.

Reference Books—

1. The Physical properties of the soil, by B. A. Keen. Longmans, Green & Co., London.
2. Soils, their origin and classification—an introduction to Pedology, by Robinson. W. Heffer & Sons, Ltd., Cambridge.
3. Soil conditions and plant growth, by E. J. Russel, 5th Edition. Longmans, Green & Co., London.
4. Text-book of Agricultural Bacteriology by Lohnis and Fred. Mc. Graw-Hill Book Company, New York.

Manures.

Text-book—

Fertilisers and Manures, by A. D. Hall. J. Murray, London.

Reference Books—

Manures and Fertilisers, by Wheeler. Macmillan & Co., New York.

Plant Chemistry.

Text-book—

Chemistry of Plant Life, by Thatcher. Mc. Graw-Hill Book Company, London.

Reference Books—

1. Introduction to the Chemistry of plant products, by Haas and Hill—Volume I and Volume II. Longmans, Green & Co., London.
2. Plant Physiological Chemistry, by Harvey. Century & Co., London.

Animal Chemistry.

Reference Books—

1. Nutrition of Farm Animals, by Armsby. Macmillan & Co., Ltd., London.
2. The Principles of animal nutrition, by Armsby.
3. The Chemistry of cattle feeding and dairying, by G. A. Murray. Longmans, Green & Co., London.

Dairy Chemistry.

Text-book—

Text-book of Dairy Chemistry, by E. R. Ling. Chapman & Hall Ltd., London.

Reference Books—

1. Dairy Chemistry, by H. D. Richmond, Griffin & Co., Ltd., London.
2. Dairy Bacteriology, by Orla Jensen. J. & A. Churchill Ltd., London.

Zoology.

Reference Books—

1. Some South Indian Insects by Fletcher.
2. Zoology for Indian Students, by Parker and Bhatia. Macmillan & Co., London.
3. Report of the Proceedings of the Entomological Meeting at Pusa, 2nd, 3rd, 4th and 5th.
4. Annotated List of the Insects affecting the important Cultivated Plants in South India.
Madras Agricultural Department Bulletin No. 27 (New Series), by Dr. T. V. Ramakrishna Ayyar.
5. Indian Insect Life, by Lefroy.

Engineering (Mechanical).

Text-books—

1. A Laboratory Manual of Farm Machinery, by Frederick A. Wirt, Kansa State, Agricultural College. Ross & Co., Mylapore, Madras.
2. Farm Motors by Andrew A. Potter, Purdue University, Agricultural Engineering Series. Ross & Co., Mylapore, Madras.

Reference Books—

1. Electro Farming by R. Borlase Mathews, A.M.I.C.E. B. T. Batsford Ltd., London.
2. Sugar Machinery by Walls Tayler, A.M.I.C.E. B. T. Batsford Ltd., London.
3. A Text-book of Applied Hydraulics, by Addison H. Chapman and Hall.
4. Farm Machine, by W. H. Maxwell, Volume I (1934) (compiled by the Institute for Agricultural Research in Engineering). Oxford University Press.

Engineering (Civil).

Text-book—

1. Agricultural Surveying including Mensuration, Road Construction and Drainage by John Malcolm. Tutorial Press.
2. Notes on Building Materials for Indian Students, by K. Narayana Ayyangar of Madras Engineering Service. Wesleyan Mission Press, Mysore.
3. Notes on Building Construction for Indian Students, by K. Narayana Ayyangar. Higginbothams.

Reference Books—

1. Agricultural Engineering, by Davidson. Webb Publishing Co., Minnesota, U. S. A.
2. Hydraulics, by Col. H. D. Love. Higginbothams, Madras.
3. Building Construction and Drawing, by E. F. Mitchell & G. A. Mitchell—Elementary Course, Part I, B. T. Batsford Ltd., London
4. Text-book on Estimating, by J. Schoury (College of Engineering Manual), 4th reprint, Text and Plates. Government Press, Madras.
5. Hints on Estimating.

Animal Hygiene.

Text-books—

1. Some Diseases of Cattle in India for Stock Owners. Higginbothams & Co., Madras.
2. Bailleres Atlas of the Ox, Its Anatomy and Physiology. Baillere Tindall & Co., London.
3. Veterinary Pharmacopea of Bazaar Drugs, by J. D. E. Holmes. Higginbothams & Co., Madras.

Reference Books—

1. Principles of Veterinary Science, by F. B. Hadley. W. B. Saunders & Co. London.
2. Disease of Animals in Tropical Countries, by Edmonds and Walker. Baillere Tindall & Co., London.
3. Physiology of Farm Animals, by F. H. A. Marshall and E. Hallen. Cambridge University Press, London.
4. Veterinary Therapeutics by Wallis Hoare. William Wood & Co., New York.
5. Poultry Diseases, by Kaupp. Baillere Tindall & Co., London.

Books common to Agriculture and Chemistry.

1. The Soil, by A. D. Hall, 1932.
2. Soil Physics and Management, by T. G. Mosier and A. A. Gustafson, 1925.
3. Fertilisers and Crops, by L. L. Vanslyke, 1927.
4. Principles and Practice and Green Manuring, by A. A. Pieters, 1927.
5. Feeds and Feeding, by W. A. Henry and F. B. Morrison, 1928.
6. Animal Nutrition, by T. B. Wood, 1927.
7. Scientific Feeding of Animals, by O. Kellner, 1920.

Book common to Agriculture, Chemistry and Veterinary Science.

Animal Nutrition and Veterinary Dietetics, by R. G. Linton, 1927.

Book common to Agriculture and Engineering.

Farm Machinery, by A. Stone, 1928.

APPENDIX XIII.

B. V. Sc. DEGREE COURSE.

Syllabus.

BIOLOGY.

The course consists of lectures and practical work, having not less than 70 hours for the former and 50 hours for the latter.

BOTANY.

(1) *General Morphology*---

A. The vegetative organs, root, stem, leaf.

The root—forms and modifications of roots.

The stem—forms and modifications of stems.

Buds and branching.

The leaf—parts of a leaf—different kinds of leaves—venation—simple and compound leaves—arrangement of leaves on the stem and in the bud—modifications.

B. The reproductive organs—inflorescences—indefinite and definite—the distinctive characters of the following kinds:—raceme—corymb—spike—spadix, panicle—umbel—capitulum—cyme, etc.,—bracts—floral symmetry—parts of a flower—thalamus—calyx—corolla—androecium—gynoecium—the structure and development of the ovule—pollination and fertilisation—the fruit—kinds of fruit—the seed—the embryo—scattering of fruit and seed.

(2) *Anatomy*:—Protoplasm—the cell and cell contents—the cell wall and its modifications—cell division—the tissues—epidermal—vascular and fundamental—structure of stem and root—mode of thickening in dicotyledons.

(3) *Physiology*:—Composition of plants—essential food substances—water cultures—food material and foods—absorption by leaf—photo-synthesis—respiration—absorption by roots—substances in the soil necessary for healthful growth—the form in which these are present in the soil—how they enter and the part they play—crop rotation, its purpose and physiological justification—the absorption of nitrogen—growth and its conditions—root pressure—transpiration.

Plant relations—the external relations of plants—the factors—water, light, the atmosphere, the soil, animals—the growth forms of plants—herb—shrub, and tree—parasites—saprophytes.

(4) Classification—the principles of classification—the distinctive characters of Thallophyta, bryophyta, pteridophyta, spermatophyta—characters of the following natural orders:—coniferae—gramineae—liliaceae—ranunculaceae—papaveraceae—cruciferae—rosaceae—leguminosae—umbelliferae—solanaceae—labiatae—scrophulariaceae—compositae.

Ferns — mosses — algae — fungi — bacteria — typical life histories—

Practical—

Practical work in the laboratory includes the dissection of flowers, fruit, seed.

ZOOLOGY.

A. Description of amoeba, paramoecium, noctiluca, trypanosoma, piroplasma, coccidium and haemamoeba—general characters of protozoa.

B. Short account of sponges.

C. Coelenterata—Hydra.

D. Vermes—description of structure and life-history of liver-fluke, tapeworm, trichina, earthworm, leech,—general characters of platyhelminthes, nemathelminthes, annelida.

E. Arthropoda—main characteristics of the phylum and distinguishing features of its sub-divisions—crustacea—myriapoda—insecta—arachnida—structure of the cockroach as a type of insecta—the metamorphosis of insects—the characters of coleoptera, hymenoptera, diptera, orthoptera, with examples of useful and hurtful forms.

F. General structure and life-history of mange mites and ticks.

G. General characters of echinodermata.

H. General characters of mollusca.

I. Short account of forms intermediate between vertebrata and invertebrata.

K. Pisces—description of a skate—general characters of elasmobranchii—teleostomi—ganoidei—dipnoi.

L. Structure and life-history of a frog—urodela and anura.

M. General characters of the reptiles—external features of lizard, snake, tortoise, crocodile.

N. General characters of birds with special reference to feathers, wing, leg and respiratory organs.

O. Characters of mammalia, and of the following orders—monotremata, marsupialia, edentata, cetacea, ungulata, carnivora, rodentia, insectivora, chiroptera, primates.

P. Evolution—origin of species—theories of heredity.

At the end of the course each student shall be examined both in written and oral tests.

CHEMISTRY.

The course consists of lectures and practical work, having not less than 70 hours for the former and 80 hours for the latter.

A detailed study of the portions below will be covered and the student will be taught general principles of volumetric analysis.

Chemistry—physical chemistry—fundamental properties of matter—heat—light—electricity (elementary).

Definition—compounds and elements—mechanical mixture and chemical compound.

Atoms—molecules—atomic weight, symbols, formulae and equations.

Fire—combustion—oxidation—flame—test for CO_2 —production of heat in chemical change.

Air—composition—air a mixture—uses of the various gases—action of plants and animals.

Water—composition—electrolysis of water—volumetric and gravimetric composition—solution and crystallisation—water of crystallisation—water of condensation. Colloidal solution—impurities—suspended and dissolved—filtration—decantation—distillation—hard and soft water—permanent and temporary hardness—rain water—sea water—spring water and surface well water—surface tension—osmotic pressure—hydrogen-ion concentration.

Earth—classification of compounds and elements—oxides—hydroxides—alkalies—acids—salts—normal, basic and acid salts.

Non-metals—preparation—properties and test of oxygen—hydrogen—nitrogen—ammonia—nitric acid and carbon dioxide.

Carbon—varieties—charcoal—graphite—diamond—coal—distillation of coal—coal gas—manufacture—uses—Bunsen's burner—marsh gas—Davy's safety lamp—carbon monoxide.

The Halogens—chlorine—hydrochloric acid—bromine—iodine—fluorine.

Sulphur—different varieties—sulphuric acid.

Phosphorus—red and yellow.

• Silicon.

Metals—occurrence—preparations—properties and uses of the more important salts used in medicine.

Organic compounds — hydro-carbons — paraffins — olefines — acetylene, etc.—homologous series.

Alcohols—different varieties—acids—ethers—amines—amides in general and the preparations and characteristics of the more common of these and their commoner derivatives.

Fats—oils—soaps—glycerine, etc.

Carbohydrates—starch—cellulose—sugars, etc.

Fermentations—alcoholic—acetic—lactic—butyric.

Distillation of wood and coal.

Aromatic compounds—benzene and its chief derivatives.

Glucosides—turpentine—camphor.

Cyanogen compounds.

Alkaloids.

Albumen and albuminoids—Urea.

Ultimate analysis of organic compounds.

Practical—

Inorganic—

Students will be expected,

to be familiar with the ordinary materials and apparatus used in laboratories with such operations as filtration, solution, distillation, etc.,

to be familiar with the use of a chemical balance, graduated flasks, pipettes and burettes,

to prepare simple inorganic substances,

to perform simple quantitative exercises, such as determination of melting points, boiling points, densities, and the determination of the amount of water in substance or of the amount of ash left on the ignition of a substance.

to prepare and use in simple volumetric estimation standard solutions of acids, alkalies, etc.,

to determine the approximate hydrogen-ion concentration of a given solution by means of indicators.

Organic—

Detection of the following elements :—carbon—hydrogen—nitrogen—sulphur—phosphorus.

Preparation of chloroform and iodoform from ethyl alcohol.

Tests for ethyl alcohol, glucose, cane sugar, phenol, salicylic acid, acetic acid, oxalic acid, cyanic acid, tartaric acid, citric acid, and urea.

The preparation of fatty acid from fat.

After the termination of the course each candidate shall be examined in written, oral and practical tests.

PHYSIOLOGY, HISTOLOGY AND BIO-CHEMISTRY.

The course consists of lectures and practical work, having not less than 120 hours for the former and 70 hours for the latter.

PHYSIOLOGY.

Lectures:—

Animal cell—elementary tissues as epithelial—connective—muscular and nervous.

Blood—red and white corpuscles, their origin, life history and functions—haemoglobin and its derivative—haemolysis—reaction of blood—estimation of volume of blood corpuscles and haemoglobin—coagulation of blood.

Circulation—physiological anatomy of the heart and action of valves—the mechanism of heart pump—causation of heart beat—properties of cardiac muscle—factors influencing the activity of cardiac muscle—output of heart—the nervous regulation of the heart.

Blood pressure—velocity of blood—pulse—vasomotor mechanism.

Lymphatic system—chyle.

Digestive—chemistry of proteins, fats and carbo-hydrates—vitamins.

Saliva—gastric juice—pancreatic juice—bile—succus entericus—actions of ferments of each—liver and its functions—pancreas and its function.

Movements of stomach and intestines.

Absorption of food stuffs.

Respiratory—the larynx—bronchi—lungs—nerve supply—production of sounds—special respiratory acts as neighing, bellowing, barking, coughing, etc.

Mechanics of respiratory movements—chemistry of respiration—regulation of respiration.

Urine—kidneys—function—urea—contents of urine—reaction—characters in different animals—act of micturition.

Endocrine glands—spleen—adrenals—thyroid—thymus—pituitary—pineal-functions.

Nutrition and metabolism,—metabolism of proteins, fats and carbo-hydrates—glycosuria—influence of work and starvation on metabolism.

Animal heat.—

Special senses—sight—examination of the eye—catoptric—ophthalmoscopic and the eye board tests—normal and abnormal vision—taste—buds—hunger—thirst—sense of hearing—movements of the external ear—semi-circular canals.

Reproduction—male and female reproductive organs—puberty—sexual act—oestrus—impregnation—foetus—foetal circulation—foetal membranes—milk—its secretion and composition.

The foot—plantar cushion—lateral cartilages—their use—circulation—anti-concussion mechanism.

Locomotor system—muscles—fatigue—tendons—ligaments—paces employed by the horse—walking—trotting—canter—gallop, etc.

Nervous system—irritability—differences in structure and function—reflex action—brain and spinal cord—functions—nerve trunks—regeneration and degeneration—motor and sensory nerves—nerve endings—sympathetic system.

Practical—

Excitation of tissues.

Physical properties of blood.

The heart.

The blood vessels.

Circulation.

Pulmonary ventilation.

The gases of the blood.

Reaction of the blood.

The contractile tissues

HISTOLOGY.*Lectures—*

Microscope—its various parts and care and cleanliness in the use of the same.

Cell and its contents.

Blood and its contents.

Microscopical examination of blood of different animals—histological and blood stains employed.

Epithelium—varieties.

Connective tissue—varieties.

Muscular tissue—varieties.

Nervous tissue—varieties.

Laboratory methods in the preparation and examination of normal tissues.

Blood vessels—structure and differences.

Alimentary canal—parts—structure of each.

Liver—structure—gall-bladder—structure.

Pancreas—structure.

Structure of kidneys, ureter—bladder, trachea, bronchi and lung.

Skin.

Ductless glands.

Genital system—male and female.

Nervous system.

Sensory organs.

Practical—

Use and handling of different parts of microscope—examination of different extraneous objects likely to be confounded with in the microscopical examination—examination of fresh blood from (a) horse, (b) rabbit and (c) fowl—Preparation, staining and examination of blood films from (a) horse, (b) ox, (c) fowl, (d) dog, (e) sheep and (f) camel—Examination of a drop of blood with a drop of 1% saline—examination of a drop of blood with tap water.

Elementary tissues:—(a) Epithelial tissue—squamous, cubical, columnar, ciliated, transitional and stratified.

(b) Connective tissues—areolar, fibrous, elastic adipose, retiform, lymphoid and jelly-like tissues—cartilage—hyaline—yellow elastic and white fibro-cartilage—reticular cartilage—bone—transverse and longitudinal section of bone.

(c) Muscular tissue—striated, plain and cardiac muscle.

(d) Nervous tissue—medullated and non-medullated nerves—nerve cells.

Histological methods—fixation and hardening of tissues—dehydration—clearing—in filtration with paraffin—section cutting—preserving—staining and mounting.

Transverse section of large and small artery—transverse section of vein—section of tongue—submaxillary and parotid salivary glands—oesophagus—sections from rumen, reticulum—ox—sections from left and right halves of the horse's stomach—cardiac and pyloric portions of dog's stomach, sections of duodenum—small and large intestines—sections of liver—gall bladder—section of pancreas—section of kidney—ureter—bladder—sections of trachea, lung and skin—sections of spleen—thyroid—thymus—adrenal and sagittal section of pituitary—section of lymphatic gland and haemo-lymph glands—section of testis—epididymis—vas deferens—prostate—seminal vesicle—bulbo-urethral gland—penis—sections of ovary—oviduct—uterus—mammary gland—sections of spinal cord—cerebellum and cerebrum.

After the termination of the course, each candidate will be examined in written, oral and practical tests.

BIOCHEMISTRY.

Use and practical technique of the determination of hydrogen-ion concentration of fluids—general reactions of proteids—albumen—globulin—metaproteins—proteoses—peptones, etc.—general reactions of carbo-hydrates—starch—cane sugar—lactose—maltose—glucose.

Estimation of sugar—use of polarimeter.

Fat—practical study of digestion of fat.

Practical study of the various enzymes on foodstuffs.

Milk—study of the physical characters—estimation of fat—lactose and inorganic constituents—action of rennin on milk.

Blood—study of the action of alkalies and acids on blood—spectroscopic examination—examination for and determination of blood-stained materials.

Bile—test for bile salts and pigments.

Urine—study of physical characters of and determination of the various constituents.

General practice in the determination of substances of physiological interest.

PATHOLOGY, BACTERIOLOGY AND IMMUNOLOGY.

The course consists of lectures and practical work, having not less than 100 hours for the former and 75 hours for the latter.

I. *General Pathology.*—

Health and disease—methods of study—factors contributing to health and disease—their limitations—a general study of the several disturbances brought about in the different systems in disease—study of their correlation—terminations—general and local death—necrosis and gangrene.

Disturbances in circulation of blood—inter-cellular fluids and lymph—hyperaemia—active and passive hyperaemia—anaemia—thrombosis—embolism—infarction—the character and movement of the inter-cellular fluids and their abnormal accumulation—oedema and ascitis—nature of normal metabolism—disturbances brought about during disease and factors contributing to such disturbances—the more common degenerations met with in diseased tissue—paranchymatous degeneration—fatty degeneration and the nature of the process and how it differs from fatty infiltration—hyaline—mucoid—colloid—caseous—pigmentary and amyloid degenerations—their causes and effects—atrophy—its causes—hypertrophy.

How a body behaves against injury—immediate and late reactions to injury—inflammation—phenomena vascular and textural connected with it—retrogressive process—repair—regeneration—characters of regenerated tissues.

Neoplasms—their general nature—theories connected with their formation—classification how based—benign and malignant—differentiation of types by histological structure—macroscopic and microscopic characters of the more common tumours met with — fibroma — lipoma — chondroma — myoma — angioma — papilloma.

Sarcomata—their general characters and types—round celled and spindle celled sarcoma.

Carcinoma—mode of growth and metastasis—types of carcinoma—epithelioma—adeno-carcinoma—scirrhus carcinoma—their predilection seats.

II. *Special Pathology.*—

The liver—structure of the liver in relation to disease—passive congestion—cloudy swelling—fatty infiltration—fatty degeneration—cirrhosis of liver—its various types—its causes—jaundice and its causes.

Lungs—Bronchitis—pneumonia and its types—emphysema—atelectasis.

Serous membranes—Pleurisy—peritonitis—Meningitis.

Kidneys—Nephritis—general nature of the process—acute and chronic—glomerular nephritis—tubular nephritis—interstitial nephritis—arteriosclerotic disease of the kidney—pyaemic nephritis—functional alterations and their effects—the effects of renal insufficiency—albuminuria—glycosuria.

Circulatory system—The general mechanism of the heart and blood vessels and their relation to the several systems in health and disease—pericarditis—endocarditis—atheroma—aneurism—phlebitis.

Diseases of pathological variation in blood and the terms used to express such variations—Polycythaemia—anisocytosis—Poikilocytosis—Nucleated forms.

Type of injury caused by bacterial invasion—their course and lesions they produce—a general study of the pathology of the lesion caused by more common diseases of cattle, horses and dogs.

III. *Practical*—

In the practical study of the subjects, students will be required to maintain a record of the several post-mortems which they have attended. At least not less than 20 such post-mortems should have been recorded by each student. Students will be instructed in the methods of study of disease investigation—the nature of records required to be kept in their study—the mode of collection and preservation of morbid materials for systematic examination and diagnosis—different methods of staining adopted in respect of examination of sections of morbid material—their diagnosis.

IV. *Bacteriology and Immunology*.—

General Bacteriology.—

Classification of bacteria—principles on which such classification is adopted—structure of bacteria—their reproduction—their behaviour in adverse conditions—formation of spores and how effected—their importance in the life of the bacterium—laboratory methods adopted in their study—motility—preparation of more important culture media used for cultivation of the more common pathogenic micro-organisms—methods of isolation of bacteria in pure culture—study of the aerobic and anaerobic methods—examination of bacteria—methods adopted in the examination and diagnosis of bacteria—morphological—the several staining methods adopted for their identification and the principles underlying each method—general cultural characters of the different bacteria—pathogenic effects in experimental animals and their methods of study.

Special Bacteriology.—

A detailed knowledge as to the morphology, identification, cultural characters and immunological factors of the following organisms:—

1. Streptococci.
2. Staphylococci.
3. Bacillus anthracis.
4. Vibrion septique.
5. Bacillus chauvoei.
6. Tetanus bacilli.
7. Organism of Haemorrhagic Septicaemia.
8. Do. fowl cholera.
9. Bacillus mallei.
10. Do. abortus (Bang).
11. Do. coli.
12. Tubercle bacilli.
13. Epizootic lymphangitis organism.
14. Johne's bacilli.
15. Bovine lymphangitis organism.
16. Leptospira ictero-haemorrhagica.
17. Treponema gallinarum.

General knowledge of the virus of:—

1. Rinderpest.
2. Variola.
3. Rabies.
4. Foot and mouth disease.
5. Distemper.
6. Chicken pox.

Mycotic diseases:—

1. Nasal granuloma.
Rhinosporidium.
2. Ringworm.
3. Actinomycosis.

Lectures with magic lantern demonstrations will also be given wherever possible and students given opportunities of seeing different cultures of bacteria and examination of film preparation.

During the year, the students will be given practical instruction in the methods of collecting materials; making cultures; examination of cultures for purposes of identification and isolation.

IMMUNOLOGY.

A. *Immunity*—

1. Introductory—relations of bacteria to disease—conditions modifying pathogenicity—disturbance of metabolism by bacterial action—production of toxins by bacteria—the theory of toxic action—Metchnikoff's theory—theory of Vaughan.

2. Natural immunity—principles underlying.

3. Artificial immunity.

4. Methods of producing active immunity.

(a) by the injection of virulent organisms.

(b) do. attenuated organisms.

(c) do. dead organisms.

(d) do. toxins or extracts of organisms.

5. Method of producing passive immunity.

6. Autogenous vaccines.

7. The formation of anti-toxic sera.

8. Do. anti-bacterial or anti-microbial sera.

9. The properties of anti-bacterial sera:—

(a) Bacterial and lysogenic action.

(b) Opsonic action.

(c) Agglutinative and precipitative action.

10. Fixation and deviation of complements.

11. Theories as to acquired immunity.

(a) Ehrlich's side chain theory.

(b) Metchnikoff's theory of phagocytosis.

12. Anaphylaxis, allergy or hypersensitiveness.

13. Polyvalent and univalent serum.

B. *Vaccine and serum therapy*—

The preparation and application of mallein.

Do. do. tuberculin.

Do. do. sera and vaccines.

used in the following diseases:—

Rinderpest.
Black Quarter.
Anthrax.
Strangles.
Tetanus.
Haemorrhagic septicaemia.
Rabies.
Distemper.
Fowl-pox.

C. Disinfection.

Methods—Moist and dry heat—natural agents—chemical agents.

Action and uses of the following agents:—

Chlorine.
Iodine.
Nascent oxygen.
Perchloride of mercury.
Formalin.
Sulphuric acid.
Iodoform and acriflavine.

Students will be given opportunities to acquaint themselves with the common immunological methods adopted in respect of diagnosis and prevention of the more common bacterial diseases.

After the termination of the course each candidate shall be examined in written, oral and practical tests.

PARASITOLOGY.

The course consists of lectures and practical work, having not less than 40 hours for the former and 45 hours for the later.

Parasitology.—

A. Animal Parasites:—

1. Protozoa—Class Rhizopoda.
Family Amoebidae.
Genus *Entamoeba*.
Species *E. coli*. and *E. histolytica*.

Class Mastigophora.—

Family Trypanosomidae.

Genus *Leishmania*—sp. *L. donovani*, *L. tropica*.„ *Leptomonas*—sp. *L. ctenocephali*.„ *Herpetomonas*—sp. *H. muscarum*.„ *Crithidia*—sp. *Crithidia tabani*.„ *Trypanosoma*—sp. *T. evansi*, *T. equiperdum*.*T. brucei*, *T. congolense*, *T. lewisi*.*T. theileri*, *T. melophagium*.A reference to Trypanosomes pathogenic to man such as *T. rhodesiense* and *T. gambiense* is to be made.*Class Sporozoa.*—

Family Eimeriidae.

Sub-family Isosporinae.

Genus *Isospora*—sp. *I. bigemina*, *I. rivolta*.

Sub-family Eimeriinae.

Genus *Eimeria*—sp. *E. zurnii* in cattle.*E. stiedae*.
E. perforans. } Rabbits.*E. faurei*.—Sheep.*E. canis*.—Dog.

Family Haemoproteidae.

Genus *Haemoproteus*—sp. *H. columbae*.Genus *Leucocytozoon*—sp. *L. neavei*.

Family Plasmodiidae.

Genus *Plasmodium*.sp. *P. malariae*.*P. vivax*.*P. falciparum*.*P. bubalis*.*P. praecox*.

Family—Babesiidae.

Genus *Babesia*.

- sp. *B. equi*. }
 B. caballi. } Horse.
 B. canis.—Dog.
 B. bigemina. }
 B. bovis. } Cattle.
 B. mutans. }
 B. gibsoni.—Dog.
 B. ovis. }
 B. motasi. } Sheep.

Family *Theileriidae*.Genus *Theileria*.

- sp. *Theileria parva*.

Sub-order *Haemogregarinidea*.Family *Hepatozoidae*.

- Genus *Hepatazoon*—sp. *H. canis*.

*Class Ciliata.*Genus—*Balantidium*.

- sp. *B. coli*.

B. suis.

Spirochaetes.Genus *Treponema*—*T. gallinarum*.

„ *Leptospira*—*L. icterohaemorrhagica*.

„ *Spirillum*—*Spirillum minus*.

II. *Helminths*—Class *platyhelminthes*.Order *Trematoda*.Family *Fasciolidae*.Genus *Fasciola*—sp. *F. hepatica*, *F. gigantica*.Family—*Schistosomatidae*.Genus—*Schistosoma*—sp. *S. bovis*.

S. indicum.

S. bomfordi.

S. spindale.

S. nasalis.

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Family Paramphistomidae.Genus *Paramphistomum*—sp. *P. cervi*.*P. explanatum*.Genus *Gastrothylax*—sp. *G. crumenifer*.Genus *Gastro-discus*—sp. *G. secundus*.Genus *Fischoederius*—sp. *F. elongatus*.**Class Cestoda.—**Order *Bothriocephalidea*.Genus *Diphyllbothrium*.sp. *D. latum*.*D. reptans*.Order *Taeniidea*.Genus—*Mesocestoides*—sp. *M. lineatus*.Family *Anoplocephalidae*—Genus *Anoplocephala*—sp. *A. perfoliata*.Genus *Moniezia*—sp. *M. expansa*.sp. *M. benedeni*.„ *Avitellina*—sp. *A. lahorea*.Family *Dilepididae*—Genus *Dipylidium*—sp. *D. caninum*.Family *Hymenolepididae*—Genus *Hymenolepis*—sp. *H. diminuta*.Family *Taenidae*—Genus *Taenia*—sp. *T. solium*.*T. saginata*.*T. hydatigena*.*T. taeniaformis*.Genus *Multiceps*—sp. *M. multiceps*.*M. galgeri*.Genus *Echinococcus*—sp. *E. granulosus*.Family *Davaineidae*—Genus *Raillietina*—sp. *R. tetragona*.**Class Nematelminthes.—**Order *Ascaroidea*.Family *Ascaridae*—Genus *Ascaris*—sp. *A. vitulorum*.
A. equorum.Genus *Toxocara*—sp. *T. canis*.*T. mystax*.Genus *Toxascaris*—sp. *T. leopina*.

Family Heterakidae—Genus Heterakis—sp. *H. gallinae*.

Genus Ascaridia—sp. *A. lineata*.

Family Oxyuridae—Genus Oxyuris—sp. *O. equi*.

Family Rhabditidae—Genus Strongyloides—sp. *S. stercoralis*.

Order Strongyloidea.—

Family Strongylidae—Genus Strongylus—sp. *S. equinus*.

S. edentatus.

S. vulgaris.

Genus Trichonema—sp. *T. longibursatum*.

Genus Oesophagostomum—sp. *O. radiatum*.

O. columbianum.

Genus Syngamus—sp. *S. trachea*.

S. laryngeus.

Family Ancylostomidae—Genus Ancylostoma—

sp. *A. caninum*.

A. braziliense.

A. duodenale.

Genus Necator—sp. *N. americanus*.

Genus Bunostomum—sp. *B. phlebotomum*.

Family Metastrongylidae—Genus Metastrongylus sp. *M. apri*.

Genus Dictyocaulus—sp. *D. filaria*.

„ Protostrongylus—sp. *P. rufescens*.

„ Angiostrongylus—sp. *A. vasorum*.

Family Trichostrongylidae—Genus Trichostrongylus— sp. *T. extenuatus*.

Genus Haemonchus—sp. *H. contortus*.

„ Mecistocirrus—sp. *M. digitatus*.

Order Filarioidea.

Family Filariidae—Genus Parafilaria—sp. *P. multipapillosa*.

Genus Dirofilaria—sp. *D. immitis*.

D. repens.

Genus Acanthocheilonema—sp. *A. reconditum*.

Genus *Onchocerca*—sp. *O. indica*.

Setaria—sp. *S. equina*.

S. digitata.

S. labiato-papillosa.

Family *Philometridae*—Genus *Dracunculus*—sp. *D. medienensis*.

Family *Spiruridae*—Genus *Habronema*—sp. *H. muscae*.

H. megastoma.

H. microstoma.

Genus *Arduenna*—sp. *A. strongylina*.

„ *Physocephalus*—sp. *P. sexalatus*.

„ *Spirocerca*—sp. *S. sanguinolenta*.

„ *Gongylonema*—sp. *G. verrucosum*.

„ *Physaloptera*—sp. *P. gemina*.

„ *Thelazia*—sp. *T. rhodesii*.

sp. *T. callipaeda*.

Family *Gnathostomidae*—Genus *Gnathostoma*—sp. *G. spinigerum*.

Order *Trichinelloidea*.

Family *Trichinellidae*—Genus *Trichinella*—sp. *T. spiralis*.

Family *Trichuridae*—Genus *Trichuris*—*T. ovis*.

T. discolor.

Acanthocephala.

Family *Gigantorhynchidae*—Genus *Macracanthorhynchus*—sp. *M. hirudinaceus*.

Entomology.—

(a) *Order Diptera.*

Series I. *Nematocera*.

Family *Culicidae*—Genus *Culex*—*C. fatigans*.

„ *Anopheles*—*A. rossii*.

„ *Stegomyia* (*aedes*) *A. argentis*.

Family *Psychodidae*—Genus *Phlebotomum*.

„ *Simuliidae*—Genus *Simulium*.

„ *Chironomidae*—Genus *Chironomus*.

„ *Ceratopogonidae*—Genus *Culicoides*.

Series II. Brachycera.

Family Tabanidae—Genus Tabanus.

„ Haematopota.

„ Chrysops.

Series III. Athericera.

Family Oestridae—Genus Oestrus—sp. O. ovis.

„ Gastrophylus—sp. G. equi.

„ Hypoderma—sp. H. bovis.

Family Sarcophagidae—Genus Sarcophaga.

Family Muscidae—Genus Musca.

„ Stomoxys.

„ Glossina.

„ Calliphora.

„ Lucilia.

„ Chrysomia.

„ Lyperosia.

Series IV. Pupipara—Genus Hippobosca.

„ Lynchia.

(b) Order Aphaniptera (Siphonaptera).

Family Pulicidae—Genus Pulex.

„ Ctenocephalus.

„ Xenopsylla.

Family Sarcopsillidae—Genus Echidnophaga.

„ Sarcopsylla.

(c) Order Rhyncota (Hemiptera).

Family Cimicidae—Genus Cimex—sp. C. rotundatus.

Reduviidae—Genus Triatoma—sp. Tr. rubrofas-
ciata.

(d) Order Anoplura.

Family Haematopinidae—Genus Haematopinus.

(e) Order Mallophaga.

Family — Trichodectidae — Genus Trichodectes — sp. T.
canis.

(f) Class Arachnida—Order Acarina.

Family Argasidae—Genus Argas—sp. *A. persicus*.„ Ornithodoros—sp. *O. savignyi*.Family Ixodidae—Genus Margaropus (*Boophilus*).

„ Hyalomma.

„ Rhipicephalus.

„ Haemaphysalis.

Family Sarcoptidae—Genus—Sarcoptes.

„ Psoroptes.

„ Chorioptes.

„ Cnemidocoptes.

Family—Demodicidae—Genus Demodex.

Family—Dermanyssidae—(fowl mites) Genus Dermanyssus.

Family—Trombididae—Genus Trombidium.

Family—Tyroglyphidae—(fodder mites).

(g) Order Pentastomida.

Family Linguatulidae—Genus Linguatula—sp. *L. serrata*.*The vegetable parasite of the skin.*

Order Mucidinae—Genus Trichophyton.

(Ringworm of the Horse, Ox, Dog and Cat).

*Parasites of undetermined position.*Sarcosporidia—sp. *S. tenella*.Rhinosporidia—sp. *R. seeberi* and *R. equi*.

A brief account regarding the animal and vegetable parasites enumerated above, their control, diseases produced on the various hosts, with prominent symptoms produced and the treatment of such conditions will also be taught. After the termination of the course each candidate shall be examined in written, oral and practical tests.

PREVENTIVE MEDICINE.

The course consists of lectures and practical work having not less than 100 hours for each.

A. General.—

Definition of :—sporadic—contagious—epizootic—enzootic—
etiology—period of incubation—pyaemia—septicaemia—toxaemia—antiseptic—germicide—disinfectant—deodorant—anthelmintic—vermifuge—parasiticide.

Sanitary law—State control of contagious diseases—Acts applicable in India.

Fever—simple and specific—classical symptoms in each animal.

B. Specific Diseases.—*(1) Diseases caused by Bacteria and filterable viruses:—*

Pyaemia—septicaemia—malignant oedema—rinderpest—contagious bovine pleuro-pneumonia—foot and mouth disease—rabies—distemper—canine typhus—equine influenza—equine pleuro-pneumonia—epizootic lymphangitis—ulcerative lymphangitis—anthrax—glanders—tuberculosis—black quarter—variola—strangles—fowl cholera—haemorrhagic septicaemia—tetanus—contagious pneumonia of calves—South African horse sickness—contagious mammitis—joint ill or naval ill—malignant aphtha—contagious abortion of cows—contagious abortion of mares—bovine lymphangitis—Johne's disease—swine fever—swine plague—swine erysipelas.

(2) Diseases caused by animal and vegetable parasites:—

Coccidiosis of the ox, rabbits and birds—texas fever—East coast fever—biliary fever of horses—malignant jaundice of dogs—European redwater—theileriosis—trypanosomiasis—surra—nagana—dourine—mal de caderas—actinomycosis—spirochaetosis—ringworm—nasal granuloma.

Diseases caused by the common nematodes, trematodes, cestodes, "Bots", "Warbles" and mange mites.

C. Diagnostic tests in veterinary practice with biological products.

Mallein test—tuberculin test—precipitation test—serum agglutination test—complement fixation test—animal inoculation.

D. Prevention of the spread of diseases:—

Isolation—quarantine—notification—prophylaxis—cleaning and disinfection.

Disinfection—disinfectants—antiseptics—deodorants—fresh air—wind—sunlight—heat—electricity—disinfection by heat—dry heat—moist heat—hot water—steam—super-heated steam—steam under increased pressure—steam under reduced pressure.

Chemical disinfectants:—Perchloride of mercury—bleaching powder—lime—slaked lime—formaldehyde—tar—coal tar—carbolic acid—cresol—lysol—creolin—carbolic powders.

Fumigation—sulphurous acid gas—chlorine gas—formaldehyde—the potassium permanganas method—standardisation of disinfectants—disinfection of stables—cowsheds—kennels—piggeries etc. — mange—strangles—influenza—pneumonia—swine fever—anthrax—rinderpest—foot and mouth disease.

Disinfection of harness—drains—cattle and horse trucks.

E. Rules and Regulations regarding the transportation of animals.

After the termination of the course, each candidate shall be examined both in written and oral tests.

MEAT AND MILK INSPECTION.

The course consists of lectures and practical work for a period of not less than 40 hours.

(a) Meat Inspection.—

Objects—necessity for regulations and state and Municipal inspections—methods of inspection—ante-mortem and post-mortem.

Slaughter houses—methods of slaughter and dressing of carcasses—rigor mortis and the setting of meat.

Normal condition of carcasses—dressed weight—distinguishing features of different species—the blood, bone, marrow, heart, kidney, liver, etc., of ox, horse, sheep, goat, pig and dog.

Adipose tissue and its localities in carcasses.

The lymphatic glands of the body.

Classification of meat and butcher's parts.

Determination of fat animals during life—some points regarding healthy beef carcasses.

Frozen meat—chilled meat—salted and pickled meat—substitution or falsification of flesh.

Changes in carcasses not properly slaughtered—suffocation—fatigue—animals killed in a moribund condition—fevered flesh—foetal flesh—'Veal'—'Slink Veal'—Defective bleeding.

Diseased conditions caused by bacteria and parasites—parasites transmissible to man through eating flesh—Infectious diseases communicable to man—parts to be condemned—disposal.

Detailed instructions for the examination and disposal of tubercular carcasses.

Detailed instructions for the inspection and disposal of carcasses infested with animal parasites.

Putrefaction—phosphorescent meat and fly “blown” meat—meat poisoning—conditions rendering the flesh innutritious—emaciation—effects of drugs on meat—effects of food on meat—normal death of animals—emergency slaughter.

Note.—There shall be demonstration classes at the slaughter house.

(b) Milk Inspection.—

Good points in the udder of a milch cow—secretion of milk and modification of its contents—circumstances affecting the flow, duration and quantity of milk—pregnancy affecting milk secretion—appearance and composition of normal cow's, buffalo's and goat's milk—adulterants and their detection—colostrum—use of lactometer and the specific gravity of milk of various animals—good points in cow's milk—various fats in milk—volatile and non-volatile—estimation of fat in milk—albuminoids of milk—circumstances affecting quality of milk—“Milk standards” and grading of milk—methods of milking—cleanliness of milkmen—sterilization of utensils—bacteriology of milk—normal bacterial content—methods of estimating the number and kind of bacteria in milk—sources of contamination—diseases of the udder and their recognition—diseases conveyed by milk of diseased animals—products of milk—skimmed milk—butter—milk—butter—ghee—cheese, etc.—demonstration of methods adopted in a model dairy farm—changes undergone of milk on keeping—scouring and clotting of milk—preservation, storage and transmission of milk and its products—refrigeration—pasteurisation and boiling—essential requirements for a safe and sanitary milk supply.

After the termination of the course, each candidate shall be examined both in written and oral tests.

HYGIENE.

The course consists of lectures and practical work, having not less than 100 hours for the former and 20 hours for the latter.

I. Water:—

Rain water—surface water—brooks—streams—rivers—wells—shallow, deep and artesian—springs—ice water—distilled water—utility of water from various sources—classification of waters—hardness of water—significance of hard and soft water—softening of hard water—action of water on metals—Storage of water—filtration of water—sand filtration—mechanical filtration—sterilisation of water—amount of water required by animals—effect of

sewage polluted water on animals—examination of water and water supplies—collection of samples—physical—microscopical—chemical and bacteriological examinations—interpretation of results.

Practical:—Chemical and bacteriological examination of drinking water.

II. Sanitation.—

Drainage systems—drain pipes—stoneware—fireclay—cast iron—pipe connections—junctions—access covers—size of pipes—gradient of pipes—traps—definition of a good trap—Mason's trap—Buchan's trap—raking arms—Gully traps—Bell trap—Grease trap—joining pipes and fittings—comparison between fireclay and cast iron pipes and fittings—laying drains—defects—testing drains—air test—smoke test—hydraulic test—smell test—drainage system for habitations—surface drains—underground drains—disposal of manure—solid and liquid—liquid manure tanks—disposal of sewage—dry method—wet method—cess pools—surface irrigation—sewage farming—intermittent filtration—chemical treatment—electrolytic method—biologic method.

III. Air and Ventilation.—

Air—composition of air—pollution—oxygen decrease—carbon dioxide increase—significance of carbon dioxide—heat and humidity—organic and suspended matter—bad effects of impure air.

Ventilation:—Amount of air required—cubic space—general principles of ventilation—natural ventilation—size of air inlets and outlets—methods of ventilating buildings—inlets—wall windows—tobin tubes—inlet pipes—air bricks—hit and miss windows—outlets—Findlay's system—skylight—ridge ventilators—outlet shafts—extraction cowls—louvre-board ventilators—mechanical ventilation—Plenum method—vacuum method—ventilation of double storied stables—the King system of ventilation—testing the efficiency of ventilation—estimation of carbon dioxide—Argus Smith method—Lunge-Zeckendorff method—suspended matter—bacterial content—physical state of atmosphere in a building.

Practical:—Practical examination of the atmosphere.

IV. Building construction and Animal Habitations.—

Choice of sites—Farm buildings—Town buildings—arrangement of farm buildings on the site.

Building materials:—Bricks—tiles—building stones—igneous rocks—sedimentary rocks—slates—limes—mortars—cement—concrete—asphalt—felt and bituminous roof covering—timber for building purposes—defects in timber—characters of good timber.

Construction of walls:—Brick walls—stone walls.

Construction of roofs:—Couple roofs—framed roofs—steel trusses.

Construction of floors:—Foundations—bottoming—cement—concrete—whinstone and granite setts—paving bricks—asphalt—porous bricks—wood.

Construction of stables for horses—arrangement of stalls—passage—air space—ventilation and lighting—flooring—walls—doors—stall divisions—bails—mangers—hayracks—waterpots—yard troughs—loose boxes—horse fastenings—harness room—food store and food preparation room—artificial light.

Construction of cow-sheds—types of byres and general arrangement of stalls—slope of stalls—flooring of stalls—drainage of byres—milking passage—air space—floor space—food troughs—watering—stall divisions—lighting and ventilation—walls—doorways—food and manure carriers—securing cows—calf houses—food preparation room—milking-shed—milk house.

Construction of piggeries—types of piggeries and general arrangement—lighting and ventilation—fitting of pens.

Construction of dog-kennels—rabbit hutches—poultry houses—duck and goose pens.

V. *Animal nutrition and Veterinary Dietetics*:—

1. *Comparison and function of foods*:—General analysis—water—succulent and non-succulent foods—carbo-hydrates—crude fibre—soluble carbo-hydrates or nitrogen free extract—monosaccharides—disaccharides—polysaccharides—starch—cellulose—lignin—cutin—dextrose—glycogen—gums—mucilage—fat or ether extract—the proteins—crude protein—true protein—non-protein nitrogenous substances—nitrogenous concentrates—amino-acids—classification of proteins—simple proteins—conjugated proteins—glucosides—alkaloids.

Functions of food constituents—water—nitrogen—crude fibre—fat—protein—minerals—mineral elements of the body—the role of minerals in nutrition—mineral requirements of animals—mineral composition of foods—mineral composition of pastures—minerals and the pig, cow, sheep, poultry, etc.—the relation of minerals to disease—vitamins.

2. *The foods—Grains and Seeds*.—Oats—composition of oats and by-products—varieties—foreign oats—clipped oats—kiln-dried oats—Bleached oats—weathered and musty oats—new oats—germinated oats—milling of oats—by-products—screenings—oat husks—meal seeds—screen and oat dust—oat meal—oat flour—rolled oats—oat chaff—oat clippings—Sussex ground oats—bruised oats.

Wheat—composition—kinds of wheat—wheat offal—Bran—pollards—sharps—middlings—thirds—parings—toppings—germ screenings.

Barley—composition—barley meal—pot and pearl barley—barley dust—barley feed—brewer's by-products—Brewer's grains—distiller's grains.

Maize—composition—varieties—maize preparations and by-products—flaked maize—maize meal or Indian meal—maize germ cake—maize gluten meal—maize gluten feed or Paisley meal—corn and cob meal.

Rice—composition—rice meal—rice bran—rice slump—dari-seed—millet—rye—the leguminous seeds or pulses—Beans—peas—locust beans—gram—butils—kulthi—muth—mung—urad—cajri and jowari.

The forage plants:—

Some common grasses in South India:—

Andropogon annulatus.

„ *monticola.*

„ *punilus.*

Cynodon dactylon.

Digitaria sanguinalis.

Eriochloa polystachya.

Panicum colonum.

„ *crus-galli.*

„ *javanicum.*

„ *prostratum.*

„ *ramosum.*

Pennisetum cenchroidus.

Setaria verticillata.

Medicago sativa.

Hay—hay making—nutritional value of hay—varieties—ensilage—preparations—types of silage—silos—feeding of silage.

Grass land—management of pastures.

Roots, tubers, etc.—turnips—seeds—mangolds—beets—potatoes—carrots—cabbages.

Straws—oat—wheat—barley—rye—paddy—digested straw—chaff—cavings.

Oil cakes and meals—methods of manufacture—pressure—solvents—expeller—cocoanut—cotton seed—ground-nut—linseed—palmkernel—rape—sesame—soyabeans—soycot—compound

Animal products—carcase residues— meat meal—meat and bone meal—bone meal—blood meal—fish meal—milk and its by-products—composition of milk of different animals—separated or skim milk—butter-milk—whey—lactose residues—colostrum.

3. The nutritive value of food—energy—gross energy—metabolisable energy—net energy—starch equivalent—maintenance starch equivalents—production starch equivalents—food units—monetary value of foods—manurial value of foods—nitrogenous ratios—fatty ratios.

4. Preparation and storage of foods—cooking and heating—dampening—soaking—grinding—crushing—preparation of roots—cutting or chaffing hay and straws—storage of grains—cakes—meals—potatoes and roots.

5. The feeding of animals:—

Maintenance rations of animals.

Feeding dairy cows—general principles.

Bulk—minerals—water—Palatability—effects of foods on cow and foetus—effect of roots—foods affecting milk and butter—requirement for maintenance—requirement of milk production—requirement of foetus—feeding cows preparatory to calving—feeding after calving—wet and dry feeding—constructing rations—examples of rations—general management in cow-sheds.

Calf rearing—treatment of new-born calf—systems of calf rearing—natural and artificial rearing—points in calf management—feeding for veal.

Fattening of cattle—fattening of store cattle on pasture—fattening in courts and stalls—food requirements for fattening—bullocks—production of baby beef.

Feeding of horses—food requirements of working horses—coarse fodder—stable management—nitrogenous ratios—watering—choice of foods—rations for working horses—feeding during idleness—feeding on pasture—feeding mares in foals—feeding foals—feeding mine animals.

Feeding of pigs—feeding breeding stock and young pigs—feeding for pork and bacon.

Feeding of sheep—methods of sheep feeding.

Feeding of dogs—methods of feeding—composition of dog biscuits—nutritive requirements of dogs.

Feeding of poultry—foods given to poultry—grains—meals—concentrates—vegetables—methods of feeding—chickens—ducks—geese—turkeys.

6. Some harmful foods—mouldy and decomposed foods—mowburnt hay—new grains—dried brewer's grain—lathyrus peas—foods containing cyanogenetic glucosides—flesh products—fish meal—cotton seed—castor seed—soya beans—ergot—salt poisoning.

VI. *The care and management of animals:—*

A. *Care of the body.—*

(a) Care of the skin—cleaning—grooming—washing and bathing—shearing and clipping—blanketing and bandaging—dipping.

(b) Care of the legs, hoofs and horns.

(c) Care of animals during land and sea transportation.

B. *The management of animals.—*

(a) Stable tricks and vices and how to prevent them—teatering or weaving—hiccoughing—windsucking—cribbiting—biting—tearing the clothing—gnawing the walls and eating their own dropping—baulking—masturbating.

(b) Management of working horses—age at which horses are put to various kinds of work—breaking and training—amount of work—treatment after strenuous work—fit of harness and saddlery—bedding.

(c) Management of working bullocks—selection of oxen—hours of work for oxen—pace of working oxen—care of oxen during wet weather—care of the neck—feeding and watering of working oxen—yokes—selecting oxen for a pair.

(d) Management of dairy cattle—housing—feeding—milking, etc.

(e) Management of wool producing sheep—care of the wool—time of shearing—care after shearing.

(f) Management of sick animals—housing—feeding—clothing—exercise, etc.

VII. *Genetics:—*

The breeder—suitability of locality and climate—suitability of surroundings—water supply—selection of type.

General principles of breeding—variation—causes of variation—heredity—inheritance and variation—prepotency—heredity and diseases—fecundity—oestrus—maturity—sex—nutrition—selection in breeding—out-breeding—the Mendelian theory in brief outline—telegony—period of gestation—period of lactation—signs of pregnancy—A mono-hybrid—a di-hybrid—linkage—sex-linked—crossing over—non-disjunction—mapping of the chromosomes—mutation—sex-ratio—sex-determination—hermaphroditism—

hybridisation and heterozygosis—telegony and other disputed beliefs—method of breeding and of conducting breeding investigations.

Horses—Selection of stallions and mares—age at which to breed—prevention of injuries to stallions and mares during service—feeding and exercise of stallions—care of foaling mares—their feed and exercise—foaling—care of the foal—weaning the foal.

Cattle—selection of bulls and cows for various purposes—milk production—work purposes—beef—age at which to breed—food and exercise of breeding bulls—care of cows before and after calving—their feeding and exercise—calving—care of calves—weaning.

A short description of the more prominent Indian dairy breeds—Delhi or Murah buffaloes—Surti buffaloes—Jaffrabadi buffaloes—Scindi cow—Gir cow—Mewati cow—Montgomery cow—cross breeds.

A short description of the more important breeds of cattle in the Madras Presidency:—Amritmahal—Punganur—Alambadi—Kangayam—Nellore.

At the end of the course each student shall be examined both in written and oral tests.

TEXT-BOOKS.

FIRST YEAR OF STUDY.

Biology:—

1. Manual of Elementary Botany for India by K. Rangachari.
2. First-book of Indian Botany, by D. Oliver.
3. Zoology for Secondary Schools in India, by Sheriffs.
4. Elementary Biology by Parker.
5. Text-book of Zoology for Indian Students by Bhatia.
6. Biology for Medical Students by Henschele and Imry Cook. (Longmans).
7. Text-book of Zoology by Parker and Haswell.
8. Physiology of Domestic Animals by H. H. Dukes.

Chemistry:—

1. Text-book of Inorganic Chemistry by G. Senter.
2. Smith's Inorganic Chemistry, revised and re-written by J. Kendall.
3. Inorganic Chemistry by Sir James Walker.
4. Organic Chemistry for students of Medicine by James Walker.
5. Theoretical Organic Chemistry by Cohen.
6. Practical Chemistry for Medical students by A. C. Cumming.

SECOND YEAR OF STUDY.

Physiology including Histology and Biochemistry.—

1. Essentials of Veterinary Physiology by Paton and Orr.
2. Manual of Veterinary Physiology by Sir F. Smith.
3. Practical Physiological Chemistry by S. W. Cole.
4. Practical Chemical Physiology by W. W. Taylor.
5. Experimental Physiology by E. Sharpey-Schafer.
6. Practical Organic and Bio-chemistry by R. H. A. Plimmer.
7. Text-book of Histology by E. Sharpey-Schafer.

Pathology and Bacteriology and Immunology.—

1. Text-book of Veterinary Bacteriology and Pathology by Gaiger and Davies.
2. Manual of Veterinary Bacteriology by R. A. Kelser.
3. Veterinary Postmortem Technique by Crocker, W. J.
4. Practical Bacteriology, Blood Work and Animal Parasitology by Stitt, E. R.
5. Infection, Immunity and Biologic Therapy by Kolmer-Johns, A.
6. Veterinary Bacteriology by R. E. Buchanan.
7. Practical Pathology by Sims Woodhead, G.
8. Text-book of Pathology (General and special) by Beattie & Dickson.

Parasitology.—

1. A Manual of Helminthology, Medical and Veterinary by H. A. Baylis.
2. Animal Parasites and Parasitic Diseases by Kaupp.
3. Entomology Medical and Veterinary by W. B. Hermes.
4. Protozoology by J. G. Thompson and A. A. Robertson.
5. Introduction to Medical Protozoology by R. Knowles.
6. Text-book of Medical Entomology by W. S. Paton and Craag, F. W. (Madras).

THIRD YEAR OF STUDY.

Preventive Medicine:—

1. Special Pathology and Therapeutics of the Diseases of domestic animals by Hutyra and Marek, Vols. I, II and III.
2. Diseases of animals in Tropical countries by Edmund and Walker.

Hygiene:—

1. Veterinary Hygiene by R. G. Linton.
2. Animal Nutrition and Veterinary Dietetics by R. G. Linton.
3. Veterinary Hygiene and the Contagious diseases of domestic animals by M. Klimer.
4. A handbook of some South Indian grasses by K. Rangachari.
5. Stable management and exercise by Capt. Hayes.
6. Farm Livestock of Great Britain by Robert Wallace and J. A. S. Watson.
7. Cattle of Southern India by Lt. Col. W. D. Gunn.
8. Animal Genetics by F. A. E. Crew.
9. Animal Nutrition by Armsby.
10. Methods of Livestock Improvement by T. Murari.

Meat and milk inspection:—

1. Pocket handbook of Meat Inspection by G. Leighton, 1933.
2. Principles and Practice of Meat Inspection by G. Leighton.
3. Ostertag's text-book of Meat Inspection—Edited and revised by T. D. Young.
4. Text-book of Meat Hygiene by R. Edelmann and translated by J. R. Mohler and A. Eichhorn.
5. Care and handling of Milk by H. E. Ross, 1927.
6. Milk and Milk products by C. H. Eckles, Combs and Macy, 1929.
7. A Laboratory Manual of Milk Inspection by A. C. Aggarvala.
8. Feeding and Milking of cows by A. C. Aggarvala.

APPENDIX XIV.

EXAMINATIONS FOR TITLES IN ORIENTAL LEARNING.

SANSKRIT.

Courses of Study.

1938.

Compulsory Division—Śirōmaṇi (Regulation 6, Chapter LXI).

GENERAL PART

Preliminary Examination (6-11)—

(a) Books prescribed—

1. Viśvanāthapañcānana—Muktāvali with
Śabdakhaṇḍa-dinakarī.
2. Mīmāṃsānyāyāprakāśa—Apōdēva
3. Siddhāntakaumudī—Purvārdha only,
omitting Taddhita
4. Jaiminiya-nyāya-mālāvistara—from the beginning of the
work to the end of pāda I in Chap. III.

(Nirnaya
Sagara
Press,
Bombay).

(b) Books prescribed—

1. Rīg Veda—Vedic Reader, I to X hymns (both inclusive),
text only by A. A. Macdonell (Oxford University Press).
2. Kāthōpaniṣad—text only (Anandasrama Series, Poona).
3. Gautamadharmasūtras—the first praśna-text only (Biblio-
theca Sanskrita, Government Press, Mysore) or (Anandas-
rama Press, Poona).
4. Manu-smṛti—Chapter 9—text only (Gopal Narayan & Co.,
Bombay).

N.B.—In connection with the History of Sanskrit Language and Literature, for the Final Examination, under the General part, the attention of teachers is invited to the list of books recommended for study and consultation under the corresponding subjects, for Branch VII—B.A. (Honours) Degree Examination.

SPECIAL PART.

Regulation 6-iii, Chapter LXI.

BRANCH I—*Mīmāṃsā* Group.

Preliminary Examination.—

Books prescribed—

- | | | |
|---|---|----------------------------|
| 1. Taittiriya Samhitā with Sāyaṇa's Bhāṣya (Kāṇḍa I, Prapāthaka I). | } | Anandasrama Series, Poona. |
| 2. Aitarēya Brāhmaṇa with Sāyaṇa's Bhāṣya, the fourth Pañcikā, | | |
| 3. Āpastamba's Śrāuta-sūtras with Rudra-datta's Vṛtti—Prasnās I to V, both inclusive. | | |
| 4. Yājñavalkya-smṛti with Mitākṣarā (whole). | | |
| 5. Bhāṭṭā-dīpikā—Purvaṣaṭka only (Bibliotheca Sanskrita, Government Press, Mysore or Bibliotheca Indica, Calcutta). | | |

Final Examination.—

Books prescribed—

- | | | |
|---|---|-----------------------------------|
| 1. Bhāṭṭā-dīpikā—Uttaraṣaṭka only. | } | (Chowkhamba Book Depot, Benares). |
| 2. Śābara-bhāṣya, Chapter I—with Kumā-rila's Vārtika, Chapter I—omitting Śloka-Vārtika. | | |
| 3. Pārthāsārathimiśra's Nyāyaratnamālā. | | |
| 4. Bhāṭṭārahasya—whole (Sudarśana Press, Conjeevaram). | | |

BRANCH II—*Vedānta*.

Advaita—Preliminary Examination.—

Books prescribed—

- | | | |
|--|---|------------------------------------|
| Brahmasūtras with Śankara's Bhāṣya (Sri Vani Vilas Press, Srirangam). | | |
| Bhāmati—Catuṣsūtri— (Nirṇaya Sāgara Press, Bombay). | | |
| Pancapādikā with Vivaraṇa—the first Varṇaka only (Vizianagram Sanskrit Series, Benares). | | |
| Brhadāraṇyakōpaniṣad with Śankara's Bhāṣya—Chapters II and III only. | } | (Sri Vani Vilas Press, Srirangam). |
| Chāndōgyōpaniṣad with Śankara's Bhāṣya—Adhyāya VI only. | | |
| Māṇḍūkyōpaniṣad with Gauḍapāda's Kārikās and Śankara's Bhāṣya. | | |
| Bhagavadgītā with Śankara's Bhāṣya. | | |

Advaita—Final Examination—

(a) Books prescribed—

Siddhānta-Bindu (the whole)—text only
Advaita-siddhi:

Pariccheda I :—

(i) From the beginning of the work
up to the end of Āgamabādhōd-
dhara, (ii) Ajñānavāda, (iii)
Anirvacanīyatavāda and

Pariccheda II:—Akhaṇḍārthavāda.
Laghucandrikā from the beginning of
the work up to the end of Upādhi and
Akhaṇḍārtha-vāda section.

(Advaitamanjari
Series, Srividya
Press, Kumba-
konam or
Nirnaya Sagara
Press, Bombay).

(b) Books prescribed—

Patañjali's Yōga sūtras with Bhōja-
vṛtti.

Īśvarakṛṣṇa's Sāṅkhya kārīkas with
Gauḍapāda's Commentary.

(Chowkhamba
Book Depot,
Benares).

Advaita-Paribhāṣā by Dharmarājādharin (Venkateśvar
Press, Bombay).

Yatindramatadīpikā by Śrīnivāsācārya (Anandasrama
Press, Poona).

Daśaprakaraṇas by Madhvācārya—omitting Karma
nirṇaya and Viṣṇutattvanirṇaya—(text only) (Madhva
Vilas Book Depot, Kumbakonam).

Viśiṣṭādvaita—Preliminary Examination—

Books prescribed—

Brahmasūtras with Śrī Bhāṣya (Ananda Press, Madras).
Śrutaprakāśikā — Jijñāsādhikaraṇa (Nirnaya Sagara
Press, Bombay).

Bhagavadgīta with Rāmānuja's Bhāṣya (Ananda Press,
Madras).

Bṛhadāraṇyakōpaniṣad with Raṅgarāmānuja's Bhāṣya
(Chakravarti Ayyangar's Telugu Edition, Mysore).

Viśiṣṭādvaita—Final Examination—

(a) Books prescribed—

Vēdārthasamgraha (Paṇḍit, Benares).

Siddhitraya, by Yāmunācārya (Chowkhamba Sanskrit
Series, Benares).

Śatadūṣaṇī with Caṇḍamāruta—the first fifteen Vādas only (according to the Śāstramukṭāvalī Edition—Conjeevaram).

Nyāyasiddhāntajana—up to the end of Buddhīparicchēda or the 5th Paricchēda (Pandit, Benares, or The Śrī Vaiṣṇavasiddhānta-pracāra Sabhā, Ltd., Madras).

(b) Books prescribed—

Same as under Advaita—Final Examination.

Dvaita—Preliminary Examination—

Books prescribed—

Brahmasūtras with Madhvācārya's Bhāṣya.
Tattvapraśāsikā by Jayatīrtha.
Gītātātparyanirṇaya with Jayatīrtha's Tīkā.
Madhavabhāṣya on the Bṛhadāraṇyaka-koṇiṣad.
Madhvācārya's Anuvyākhyāna with Jayatīrtha's Nyāyasudhā—*Jijñāṣādhikaraṇa only.*

(Madhava Vilas Book Depôt, Kumbakonam).

Dvaita—Final Examination—

(a) Books prescribed—

Nyāyamṛta (the first Paricchēda only).
Bhēdōjjīvana, Vyāsarāya.
Nyāyamṛtatarangiṇī (the first Paricchēda only).

(Madhava Vilas Book Depôt, Kumbakonam).

(b) Books prescribed—

Same as under Advaita—Final Examination (b).

BRANCH III—*Nyāya Group.*

Preliminary Examination—

Books prescribed—

Kaṇāda Vaiśeṣika Sūtras—(Text only).

Gautama's Sūtras with Vātsyāyana's Bhāṣya—Chapters I and II—(Vizianagram Sanskrit Series—F. J. Lazarus & Co., Benares; or Chowkhamba Book Depôt, Benares).

Jagadīśa's Pañcalakṣaṇī and Simhavyāghrī (Chowkhamba Book Depôt, Benares).

Gadādhara's Caturdaśalakṣaṇī:

- (i) From the beginning of the work up to the end of Dvitiyaśvalakṣaṇa.
 - (ii) Kūṭāghaṭṭitalakṣaṇa.
 - (iii) Kūṭāghaṭṭitalakṣaṇa.
 - (iv) Vyadhikaraṇa - dharmāvacchinnābhāva-khaṇḍana-grantha (Chowkhamba Book Depôt, Benares).
- Gadādhara's Paksatā — Sārvabhaumāntam (Chowkhamba Book Depôt, Benares).
- Gadādhara's Siddhāntalakṣaṇam—the whole (Chowkhamba Book Depôt, Benares).

Final Examination—

Books prescribed—

Udayanācārya's Nyāyakusumāñjali (Chowkhamba Book Depôt, Benares, or Bibliotheca Indica, Calcutta).

Gadādhara's Avayava—from the beginning of the work to the end of Pratijñā. } (Chakravarti
Gadādhara's Sāmānyanirukti. } Ayyangar's
Telugu Edition, Mysore.)

Gadādhara's Savyabhicārasāmānyalakṣaṇam. } (Sudarsana
Gadādhara's Satpratipakṣa-vibhājakam. } Press, Con-
Khaṇḍadeva's Bhāṭṭarahasyam—to the end of prathamā. } jeevaram.)

Gadādhara's Vyutpattivāda—whole (Nirnaya Sagara Press, Bombay).

Gadādhara's Avacchedakatā - nirukti (Chowkhamba Book Depôt, Benares).

BRANCH IV—Vyākaraṇa Group.

Preliminary Examination—

Books prescribed—

Paribhāṣeṇḍuśekhara, (Whole). } (Chowkhamba
Praudhamanḍramā—text from the beginning to the end of Avyayibhāva. } Book Depôt,
Benares.)

Śabdaratna from the beginning to the end of Strīpratyaya.

Final Examination—

Books prescribed—

Gadādhara's Vyutpattivāda—from the beginning to the end of prathamā.

Laghuśabdenduśekhara — upto and excluding Kāraka prakaraṇa (Chowkhamba Book Depôt, Benares).

Mahābhāṣyam—Navāhnikam from the beginning (Nirnaya Sagara Press, Bombay).

Vaiyākaraṇa-bhūṣaṇa-sāra—All the sections except the Subartha-vicāra and the Nāmārthā-vicāra.

Laghumañjūṣā, by Nageśa—only the sections containing the Subartha-vicāra and the Nāmārthā-vicāra.

BRANCH V—*Sāhitya Group.*

For Sāhitya Sirōmani and Vidvān-Sanskrit, when offered as one of the two languages for the Vidvān Title under Regulation 3-(a) and (6) in Chapter LXI.

Preliminary Examination—

Books prescribed—

Bāṇa's Kādambari—the portion from the Mahāśvetāṣṭtānta to the end of Pūrvabhāga only (Bombay Sanskrit Series).

Śriharṣa's Naiṣadha, Cantos 10 and 11.

Kumārasambhava, Cantos 1 to 5 both } (Nirnaya Sagara
inclusive. } Press, Bombay).

Śākuntala. }
Mālatīmādhava. } (Gopal Narayan & Co., Bombay).
Mṛcchakaṭika. }
Mudrārāksasa. }

Nilakanṭhaviṇaya by Nilakanṭha Dīkṣita, Uchchvāsa III only. (Balamānorama Press, Mylapore).

Daṇḍin's Kāvyaḍarśa.

Siddhānta-Kaumudī—Pūrvārdha to the end of Apatyādhikāra

Final Examination.—

For Sāhitya-Sirōmani and Vidvān-Sanskrit, when offered as one of the languages under Regulations 3-a and 6, Chapter LXI.

Books prescribed—

Siddhānta Kaumudī—Uttarārdha omitting Upādī, Valdika and Svāra Prakaraṇas.

Vararuci's Prākṛta-Prakāśa (Chowkhamba Book Depôt, Benares).

Vṛttaratnākara, Chapters 1 to 4.

Vāmana's Kāvyaḷāṅkāra Sūtravṛtti.

For Sāhitya-Sirōmani only, See Chapter LXI, Regulation 6, Branch V, Final (b):

Mamṇaṭa's Kāvyaaprakāśa (Bombay Sanskrit Series).

Dhvanyāḷōka (Kāvyaṃālā Series, Bombay).

Udbhaṭa's Kāvyaḷāṅkārasāra with Pratihārendurāja's vṛtti. (Nirnaya Sagara Press, Bombay).

Citramīmāṃsā (Kāvyaṃālā Series, Bombay).

Rasaṅgādhara, by Jagannātha, from the beginning to the end of Rūpaka.

VIDVAN TITLE EXAMINATION.

For Sanskrit when offered as the subsidiary language for the Vidvān Title under Regulation 3-b in Chapter LXI.

For the Preliminary Examination—

Kālidāsa's Kumārasambhava—Cantos I to V.

Kādambari Samgraha, Pūrvabhāga (whole), by R. V. Krishnamachariyar, Government College, Kumbakonam.

For the Final Examination—

Śākuntala by Kālidāsa (whole).

BRANCH VI—Jyotiṣa Group.

Preliminary Examination—

- | | |
|---|--|
| 1. Bhāskarācārya's Bijagaṇita—complete. | } To be had of
Nirnaya Sagara
Press, Bombay,
or Punjab
Sanskrit Book
Depôt, Lahore. |
| 2. *Bhāskarācārya's Lilāvati—whole
omitting Parikarmāṣṭaka,
Kuṭṭaka and Pāśa. | |
| 3. Rēkhagaṇita by Jagannātha—Books II
and III. | |
| 4. Trikoṇamīti—To be had of Lazarus & Co., Benares. | |
| 5. Capīyatrikonamīti and Golarekhagaṇita only in the
Golaprakāśā. The portions prescribed in the Gola-
prakāśa are available at the Chowkhamba Book Depot,
Benares, and the Venkatesvar Press, Bombay. | |

Final Examination—

- | | |
|--|---|
| 1. Siddhānta-Śīrōmaṇi (whole). | } To be had of Lazarus
& Co., Benares, or
Chowkhamba Book
Depôt, Benares, or
Punjab Sanskrit Book
Depôt, Lahore, or
Anandasrama Press,
Poona, or Oriental
Books Supplying
Agency, 15, Sukra-
warpet, Poona. |
| 2. Sūryasiddhānta (whole). | |
| 3. Āryabhaṭīya (whole). | |
| 4. Bṛhat-Samhitā (whole). | |
| 5. Bṛhajjātaka (whole). | |
| 6. Muhūrtacintāmaṇi (whole) | |
| 7. Grahalāghava—from the beginning of the work to the
end of Candragrahanadhikara — Venkatesvar Press,
Bombay. | |
| 8. Praśnamarga—Pūrvārdha only. | |

*With reference to "Lilāvati", attention is invited to the Edition of this work recently brought out by Pandit V. Venkatarama Sastri, Vedanta Patasala, Nallur, via Sundaraperumal Koil, Tanjore District, (to be had of the Editor).

BRANCH VII—*Ayurveda Group.*

Preliminary Examination—

1. *Aṣṭāṅgaḥṛdaya Śārīra-Nidāna-cikitsā-sthānāni.* (To be had of Anandāśrama Press, Poona, or of Nirnaya Sagara Press, Bombay).
2. *Carakasamhitā—Sūtrasthāna only—Nirnaya Sagara Press, Bombay.*
3. *Suśruta-Samhitā—Sūtra and Śārīra only—Nirnaya Sagara Press, Bombay.*
4. *Rasaratnasamuccaya—The first eleven Chapters—To be had of the Proprietor, Venkatesvar Press, Bombay.*
5. *Pratyaksa-Śārīra—by Mahāmahopādhyāya Gaṇanath Sen, M.A., L.M. & S., Calcutta.*

Final Examination—

1. *Carakasamhitā (whole)—omitting Sūtrasthāna.*
2. *Suśrutasamhitā (whole)—omitting Sūtra and Śārīra.*
3. *Mādhavanidāna (whole)—To be had of Anandasrama Press, Poona, or the Nirnaya Sagara Press, Bombay.*
4. *Aṣṭāṅgaḥṛdaya (Kalpa and Uttara).*
5. *Rasaratnasamuccaya—Chap. 12 to the end.*
6. *Rasaḥṛdaya of Govindapāda—To be had of Nirnaya Sagara Press, Bombay.*
7. *Siddhānta Nidāna by Mahāmahopādhyāya Gaṇanath Sen, M.A., L.M. & S., Calcutta.*

MARATHI, 1938.

REGULATION 7-A—SANSKRIT AND MARATHI AS CO-ORDINATE
LANGUAGES.

For the Preliminary Examination.—

Poetry.—

1. *Kṛishna Vijaya (Purvardha), first 10 Chapters, Edited by R. D. Paradkar.*
2. *Nalopakhyan by Raghunath Pandit.*
3. *Harishchandrakhyān by Mukteshwar.*
4. *Marathi Saroopā Shakuntala by B. L. Antarkar.*

Prose.—

1. *Pratibha Sadhan by Phadke, M.A.*
2. *Hindu Dharma and Sudharana by M. S. Gole, M.A.*
3. *Vichar Vilas by V. M. Joshi, M.A., pages 1—139.*

For the Final Examination.—*Grammar, Prosody and Poetics.—*

1. Vritta Darpana by Parashuram Pant Godabole.
2. Arthalankar by V. V. Bhide, B.A.
3. Marathi Bhashechi Ghatana by R. B. Joshi.
4. Marathi Bhasheche Vakprachar, Mhani, etc., by V. V. Bhide, B.A.
5. Rasaprabodha by B. K. Makode.

N.B.—All the above books can be had at Messrs. Parachure Puranick & Co., 'Madhav Bagh', Bombay.

REGULATION 7-B—MARATHI (MAIN) AND SANSKRIT (SUBSIDIARY).*Preliminary.—**Poetry.—*

1. Krishna Vijaya (Uttarardha) by Moropant, Adhyayas 80—85 (both inclusive).
2. Uttar Ramacharitra by Parashurampant Tatya Godabole.
3. Hari Vilas by Waman Pandit, Edited by B.A. Bhide, B.A.

Prose.—

1. Sukha ani Shanti by M. H. Modak, Chapters 1—10
2. Lives of Sambhaji Maharaja and Rajaram Maharaja by M. R. Chitnis.
3. Yashavant Rao Khare by H. N. Apaté.

*Final.—**Grammar, Prosody and Poetics.—*

1. Alankar Darpana by R. V. Talekar.
2. Arthalankar by V. V. Bhide, B.A.
3. Marathi Bhashechi Ghatana by R. B. Joshi.
4. Marathi Bhasheche Vakprachar, Mhani, etc., by V. V. Bhide, B.A.
5. Vritta Darpana by Parashuram Pant Godabole.
6. Kekavali by Moropant.
7. Keshava Sitachya Kavita.
8. Rev. Tilaka's Poems.

N.B.—All the above books can be had at Messrs. Parachure Puranick & Co., 'Madhav Bagh', Bombay.

ORIYA, 1938.

VIDVAN UNDER REGULATION 7-A.

Preliminary—

1. Mahajatra by Radhanath Roy.
2. Rasakallola by Deena Krushna Das.
3. Aryajeevan by Nilakantha Das.
4. Mamu by Phakir Mohan Senapati.
5. Kisore Chendrananda Champu by Kavi Surya.
6. Sweta Dwipa Beena by Ajayachendra Das.
7. Prakrutha Pranaya Natak by R. R. Deo.

Final—

1. Alankar Chandrika by Ananta Tripathi Siromani.
2. Alankara Tarangini by Kulamoni Misra.
3. Alankar Sara (Chanda Prakarana) by S. Deo.
4. Prabandhavali—pages 1 to 45 by S. Rajaguru.
5. Sukhaboda Vyakarana by M. Rath.
6. Vyakarana Pravesa by Radhanath Rai.
7. Utkal Sahitya ra Itihasa by Vinayaka Misra.

VIDVAN UNDER REGULATION 7-B.

*Preliminary—**Poetry.—*

1. Rajadharma—Santiparva—Krishnasimha Mahabharata.
2. Sree Mukunda Dev, by Chintamani Mahanty.
3. Koteebrahmanda Sundaree (cantos 1—10) by Upendra Bhanja.
4. Pranayini by Nilakantha Das.
5. Rasakallola by Deenakrishna Das.
6. Kishore Chendrananda Champu (Oriya portion only) by Baladev Kavisurya.
7. Ratnakara Champu by Kavisurya.
8. Bhagavata (Vaman Charita only) by Jagannath Das.

Prose—

1. History of Orissa by Krupasindhu Misra.
2. Sea Voyage of Orissa in the Past by Birupaksha Kar, B.L.
3. Bayl Mahanty Panjee by Gopalachandra Praharaj.
4. Mamu by Phakirmohan Senapati.
5. Itihasaprasanga by Chintamani Acharya.
6. Viveki by Radhanath Roy.

Drama—

1. Uttararama Charita by Madhusudan Rao.
2. Prakrutapranaya Natak by Sree Radha Mohan Rajendra Dev.
3. Kalapahara by Asvinikumar Ghosh.

Grammar—

1. Sukhabodha Vyakarana by Mrutyunjaya Rath.
2. Vyakarana Sopan by Chandromohan Maharana.
3. Oriya Vyakarana by an experienced teacher.

N.B.—All the above books can be had from the Trading Company, Cuttack, or from the Students' Stores, Berhampur (Ganjam district).

*Final—**Poetry—*

1. Sundarakanda—Ramayana by K. Patnaik.
2. Moksha Dharma — Santiparva — Krushnasimha Mahabharata.
3. Adyatma Ramayan by Suryamoni Chyau Patnaik.
4. Baideheeshavilasa (cantos 1-25) by Upendra Bhanja.
5. Bidagdha Chintamoni (cantos 1-35) by Abhimanyu Samanta Simhar.
6. Pravandha Purnachandra by "Yadumoni."

Grammar—

1. Vyakarana Pravesh by Radhanath Roy.
2. Oriya Vyakarana by Madhusudan Das.

Prosody and Poetics—

1. Alankar Bodhodaya by V. S. Deb.
2. Alankar Sara by S. Deo (Chandaprakarana).
3. Prabandhavalie (pages 1 to 154) by Syamasundar Rajaguru.

History of Language and Literature—

The following books are recommended:—

1. Sarala Charita by Mruthunjaya Rath.
2. Utkala Sahitya ra Itihasa by Tarini Charana Rath.
3. Beams: Comparative Grammar of the Gaurian Languages.
4. Wilson: Philological Lectures on Sanskrit and the Derived Languages.

5. Gray: Indo-Iranian Phonology.
6. Bhasatattwa by Gopinath Nandu Sarma.
7. Prachina Utkala by Jagabandhu Simh.

N.B.—All the above books except Nos. 3, 4 and 5 under History of Language and Literature can be had from the Trading Company, Cuttack, or from the Students' Stores, Berhampur (Ganjam district). Books Nos. 3, 4 and 5 can be had from the Oriental Books Supplying Agency, 15, Shukrawar Peth, Poona City.

HINDI, 1938.

VIDVAN UNDER REGULATION 7-A—HINDI AND SANSKRIT AS CO-ORDINATE LANGUAGES.

For the Preliminary Examination.—

Prose and Poetry.—

1. Tulsi Das: Dohawali (Nagri Pracharni Sabha, Benares City).
2. Praveshika Padyavali, Part I, published by Nagri Pracharni Sabha, Benares City.
3. Maithlisaran Gupta: Chanderhas (Sahitya Sadan, Chirgaon, Jhansi).
4. Ishweri Prasad: Sapata Suman (Ram Prasad Bros., Agra).
5. Gadadhara Sinha: Kadambari (Indian Press, Ltd., Allahabad).

For the Final Examination.—

Grammar, Prosody and Poetics.—

1. Kamta Prasad: Hindi Viyakarna.
2. Raja Jaswant Singh: Bhasha Bhushan.
3. Jagannath Prasad Bhanu: Chhanda-Prabhakara.
4. Pratapa Sahi: Vyangartha Kaumadi.

Note.—The above four books are available at Ganga Pustak Mala Karyala, Lucknow.

VIDVAN UNDER REGULATION 7-B—HINDI AS THE MAIN LANGUAGE AND SANSKRIT AS THE SUBSIDIARY LANGUAGE.

For the Preliminary Examination.

Poetry.—

1. Tulsi Das: Dohawali (Nagri Pracharini Sabha, Benares, City).
2. Sur Das: Sur Panchratna.
3. Mira Bai: Mira Padavali, verses 1—100.
4. Bihari Lal: Sat Sai (Nawal Kishore Press, Lucknow).

TITLE EXAMINATION, 1938.

Prose.—

1. Lallulal : Prem Sagara (Nagri Pracharini Sabha, Benares City).
2. Gadadhara Sinha: Kadambari (Indian Press Ltd., Allahabad).
3. Premchand: Saptaraj (Hindi Pustak Agency, 203, Harrison Road, Calcutta).

Drama.—

1. Babu Harischander: Satya Harischander.
2. Maithli Saran Gupta: Chandrasah.

Grammar.—

1. Kamta Prasad Guru: Sankshipt Hindi Viyakarna (Indian Press Ltd., Allahabad).
2. Subodh Viyakaran Kaumudi.

For the Final Examination.

Poetry.—

1. Malik Muhammad Jayasi: Padmavata. (Nawal Kishore Press, Lucknow).
2. Kesav Das : Ram Chandrika (Indian Press Ltd., Allahabad).
3. Santbani Sangrah, Volume I, (Published by Belvedere Press, Allahabad).
4. Kabir Das: Kabir Vachnavali, Dohas 1—250 (Indian Press Ltd., Allahabad).

Grammar, Prosody and Poetics.—

1. Kamta Prasad: Hindi Viyakarna.
2. Madhya Hindi Viyakarna (Indian Press, Ltd., Allahabad).
3. Raja Jaswant Singh: Bhasha Bhushan.
4. Bhikhari Dasa: Kavya Nirnaya.
5. Jagannath Prasad Bhanu: Chhanda-Prabhakara.
6. Pratapa Sahi: Vyangartha Kaumudi.

Note.—All the six books are available at Ganga Pustak Mala Karyala, Lucknow.

*History of Language and Literature.—**Books recommended.—*

1. Misra Bandhu Vinoda.
2. Hindi Sahitya Ka Itihas by Ram Chandra Shukla.
3. Sahityalochana by Shyam Sunder Das.
4. Sahitya Darpana (Hindi Translation) by Saligram Sastri.

Note.—The above books are available at Ganga Pustak Mala Karyala, Lucknow.

TAMIL, 1938.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

*Preliminary—**Poetry—*

Cilappatikaram, Pukarkandam omitting Arangerrukadai.

Palamoli—Ed. by T. Chelvakesavaraya Mudaliyar, Stanzas 1—50.

Naladiyar, Arattuppal.

Tevaram (of Appar), Tirumurai IV—Padigams 1-25.

Nalayiraprabandham, Perumal Tirumoli.

Tiruvengkatakkalambakam.

Prose—

Mativanan by V. G. Suryanarayana Sastriyar.

Panchatantram—Ed. by S. Anavaratavinayakam Pillai, 5th tantram.

Essay on Kambar by T. Chelvakesavaraya Mudaliyar.

Grammar—

Nannul Viruttiyurai.

Akapporulvilakkam.

Ilakkanavilakkam, Pattiyal.

*Final—**Poetry—*

Pattuppattu, Tirumurukarrupadai and Pattinappalai.

Purananuru, Stanzas 51—100.

Jivakacintamani, Padumaiyarilambakam.

Tirukkural, Arattuppal.

Grammar—

Tolkappiyam, Colladikaram, Ilampuranam.

Yapparunkalakkarikai.

Purapporulvenbamalai, Padalams 1—9.

Dandiylankaram.

VIDVAN UNDER REGULATION 7-B.

*Preliminary—**Poetry—*

Tiruvengkatakkalambakam.

Maduraiikkalambakam.

Sekkilar Pillaittamil.

Kalaisaicchiledaivenba, stanzas 1—50.

Tiruvalangad-tirattu by Pamban Kumaragurudasa Svamigal,
Part II (Murugavel Book Depot, Royapettah, Madras).

Tanjaivanankoval.

Villiputtur Bharatam, Parvams 6—10.

Paranjotimunivar Tiruvilaiyadal, Kudal Kandan.

Pirabulingalilal, Gatis 1—5.

Takkayagapparani, Kalikku Kuli kuriyadu.

Tirukkural, Arattuppal, with Parimelalagar Ural.

Tamilvidudutu—Ed. by Mahamahopadhyaya Dr. V. Swaminatha Ayyar.

Prose—

Tolkappiya-poruladikara-araycci by M. Raghava Ayyangar.

Essay on Kambar by T. Chelvakesavaraya Mudaliyar.

Minakshisundaram Pillai Avargal Carittiram, Part I by
Mahamahopadhyaya Dr. V. Swaminatha Ayyar.

Grammar—

Tolkappiyam, Eluttadikaram, Ilampuranam.

Nannul, Colladikaram, Sankaranamacchivayar Ural.

Akapporulvilakkam (Madura Sangam Edition).

Purapporulvenbamalai.

Yapparunkalakkarigal, Old Commentary, Ed. by C. R.
Govindarajulu Mudaliyar (Ripon Press).

Dandiyalankaram, Old Commentary (Ripon Press).

Idambarappattiyal.

Final—

Poetry—

(I Paper.)

Purananuru, stanzas 151—300.

Akananuru, Kalirryanañirai.

Kalittogai, Mullaikkali.

Pattuppattu, Maduraiikkanji.

Paripadal, stanzas 1—10.

Tirukkural, Porutpal, Chapters 64—108.

Perunkadai, Lavanakandan.

(II Paper.)

Cilappadikaram, Maduraikkandam.

Manimekalai, Kadais 1—10.

Tevaram, Tirumurai V (Appar). { Saiva Siddhanta Maha
Samajam, Kallukaran
Street, Mylapore,
Madras.

Patinorantirumurai, pages 1—98.

Tiruvaymoli.

Kambaramayanam, Ayodhya-kandam.

Periyapuram, Tirunavukkarasunayanarpuranam.

Kandapuram, Daksha-kandam.

Advanced Grammar, Prosody and Poetics—

Tolkappiyam, Colladikaram, Senavaraiyam.

Nannul Virutti, Colladikaram.

Ilakkanakkottu, Vinaiyiyal.

**Tolkappiyam, Poruladikaram, Akam and Puram with Nacchi
narkkiniyar Urai, and Meyppadu and Uvamam with
Perasiriyar Urai.**

**Kalaviyarkarigai—Edited by S. Vaiyapuri Pillai, University
of Madras.**

Yapparunkalavirutti.

Maranalankaram, Porulaniyiyal.

Venbappattiyal.

History of Language and Literature—

The following books are recommended:—

**Caldwell: A Comparative Grammar of the Dravidian
Languages, Introduction.**

**Grierson: Linguistic Survey, Volume IV, Dravidian
Languages.**

**History of the Tamil Language by V. G. Suryanarayana
Sastriyar.**

Essay on Tamil by T. Chelvakesavaraya Mudaliyar.

History of Tamil Literature by M. S. Purnalingam Pillai.

**Tamil Pulavar Carittiram by Chunnakam A. Kumaraswami
Pillai.**

**Tamil Ilakkiya Varalaru by K. Subrahmanya Pillai, Tinne-
velly Town.**

VIDVAN UNDER REGULATION 7-D.

The same as for 7-B with the following additions:—

*Preliminary.—**History of Tamil Country—*

The following books are recommended:—

Tamilagam by N. S. Kandiah Pillai (Ottrumai Office, Saidapet).

Karikal Cholan I, by Pandit L. Olaganatha Pillai (Alliance Co., Mylapore).

Ceran-Cenguttuvan by Pandit M. Raghava Ayyangar (Tamil Lexicon Office, Madras).

Pallavas by P. T. Srinivasa Ayyangar.

Colavamsacarittiracurukkam by T. A. Gopinatha Rao (Madura Tamil Sangam).

Periplus, translated by S. Somasundara Desikar, (Tamil Lexicon Office, Madras).

The Chronology of the Early Tamils by K. N. Sivaraja Pillai (Madras University Publication).

*Final—**Inscriptions—*

University B.A. Selections in Tamil, Volume II, Tamil Inscriptions, 1—20.

TELUGU, 1938.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

*Preliminary—**Old Poetry—*

1. Bharatam—Adiparvamu, Canto VII.
2. Bharatam—Udyogaparvamu, Canto III.
3. Uttaraharivamsamu by Nachana Soma, Cantos I & II.
4. Bhagavatamu, IX (259—332)—Sreeramacharitramu.
5. Raghavapandaviyam, Cantos I & II, with Bhavaprakasika.
6. Yayaticharitramu, Canto II.

Poetry (Modern) —

1. Soundaryamanjari by K. Gopala Rao Garu, Teacher Training College, Saidapet, Madras.
2. Kekavali by R. V. R. Somayajulu Garu, 103, Malakpet, Hyderabad (Deccan).

Prose—

1. Ramayanavachanam by T. Tevapperumallayya Garu—
Series No. 1, Part I, Balakanda—(published by
Ananda Press, Madras).
2. Nayapradeepam—pages 1-30 with notes by D. V. Krishna-
murti Garu, available with K. Ramakrishnayya,
O. R. Institute, University of Madras.

Drama—

1. Khiljirajyapatanamu by Mr. G. V. Subba Rao, B.A., Kala
Bhavan, Chatrapur, Ganjam District.
2. Bhojakumaramu by Taduri Narasimha Rao Garu, Retired
Deputy Tahsildar, Innispeta, Rajahmundry.

Grammar, Prosody and Poetics—

Balavyakaranamu.

Praudhavyakaranamu.

Kavijanasrayamu.

Andhrachandralokamu by Taduri Narasimha Rao Garu.

Final—

Poetry (Old)—

1. Basavapuramamu—I & II.
2. Sringaranaishadhamu—I & II.
3. Prabodhachandrodayamu—I.
4. Vasucharitramu—IV & V.

Poetry (Modern)—

5. Navakusumanjali by Janamanchi Venkataramayya Garu,
from page 92 to the end. (Janamanchi Kameswara
Rao, Janamanchi House, Rajahmundry).

Drama—

Naganandamu by Vedam Venkataraya Sastri Garu.

Grammar, Prosody and Poetics—

1. Andhrasabdachintamani with Balasaraswatiyam, pub-
lished by Messrs. Vavilla Ramaswami Sastrulu & Sons,
Madras.
2. Appakaviyam, Canto III.
3. Kavyaprakasavivaranamu by Kanduru Narasimha Char-
yulu Garu, Narasimhagranthamala, Proddutur,
Cuddapah District.
4. Chintamanivishayaparisodhanamu by V. Ch. Sitarama-
swami Sastrulu (available at Messrs. Vavilla Rama-
swami Sastrulu & Sons, Madras)

VIDVAN UNDER REGULATION 7-B.

*Preliminary—**Poetry (Old)—*

1. Bharatam—Santiparvam—Canto III.
2. Kumarasambhavam by Nannechoda, Canto I (available at S. V. V. Press, Vizianagram).
3. Jaiminibharatamu, I and II.
4. Raghavapandaviyam, I and II.
5. Vishnumayanatakam, Canto III, by Radhamadhavakavi (Madras University Publication).
6. Nilasundariparinayamu, Kuchimanchi Timma Kavi.

Poetry (Modern)—

Soundaryamanjari by K. Gopala Rao, Teacher, Training College, Saidapet.

Prose—

1. Dasakumaracharitramu by Yenamachintala Sanjeevaraya Kavi, published by Messrs. Vavilla Ramaswami Sastrulu & Sons, Madras.
2. Parasuramavijayamu by Korada Ramachandra Sastri, (available with K. Ramakrishnayya, O. R. Institute, University of Madras).
3. Andhrabharatakavitavimarsanam, Parts III and IV by K. Ramakrishnayya, O. R. Institute, University of Madras.
4. Kavyanatakadi Parisilanamu by Avvari Subrahmanya Sastri, C/o. K. Subbavadhani, "Dheenabandhu Office" House, Khojjillipeta, Masulipatam.

Drama—

Uttararamacharitramu by Vavilala Vasudeva Sastri Garu, published by V. V. S. Avadhani, Retired Subordinate Judge, Masulipatam.

Grammar—

1. Balavyakaranamu.
2. Proudavyakaranamu.
3. Tatsamachandrika by Sannidhanam Suryanarayana Sastri, Mahboob College, Hyderabad.
4. Kavyalankarachudamani by Vinnakota Peddana.
5. Laghusiddhantakaumudi in Telugu by Ch. Suryanarayana Sastri, Sandhi and Samasa Prakaranams only (available at Messrs. Vavilla Ramaswami Sastrulu & Sons, Madras).

Final—

Poetry (Old)—

1. Bharatamu—Anusasanika Parvamu, Canto II.
2. Basavapuramamu—Cantos I and II.
3. Harishchandranalopakhyanamu, Canto II.
4. Bhagavatamu, 1st Skandham—Parikshit Charitramu, verses 383—529.
5. Amuktamalyada, VI, 1—66.
6. Prabhavatipradyumnam, I and II.

Poetry (Modern)—

1. Sreejeevayatra—Canto II by Sreemati Vidvan K. Kankamma Garu, Queen Mary's College, Madras.
2. Nirvachana Bharata Garbha Ramayanamu by Ravipati Lakshminarayana Rao Garu, Gurjala, Guntur District.

Prose—

1. Vimarsatarangini, Part I, by Nadakuduti Veeraraju Garu, Pithapuram.
2. An Essay on the Sources of the Prabhavati Pradyumnam by P. Lakshmikantam, (Madras University Publication).
3. Hitopadesa Champu by V. Venkataraya Sastri Garu.
4. Kavitranyakavitavimarsanam by G. V. Subbaramayya Garu, V. R. College, Nellore.

Drama—

Vichitraraghavam by Venkata Parthasarathi Kavi, Narasaraopet, Guntur District.

Grammar, Prosody and Poetics—

1. Andhra Sabda Chintamani.
2. Adharvana Karikavali.
3. Appakaviyam (except Cantos II and V).
4. Narasabhupaliyam.
5. Dasarupakamu by M. Suryanarayana Sastri, Cantos III and IV.
6. Kuvalayananda Saramu by R. Venkataramanayya, (Ananda Press, Madras).

History of Language and Literature—

1. Dravidian Languages by Vidvan G. J. Somayaji, College of Arts, Waltair.
2. Bhashotpatti Kramamu by K. Ramakrishnayya, O. R. Institute, University of Madras.
3. Andhravangmaya Charitra Sangrahamu (Messrs. Vavilla and Sons, Madras).

KANNADA, 1938.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

*Preliminary—**Poetry and Prose—*

1. Vikramarjuna Vijaya by Pampa, Chapters 11 and 12.
(Karnataka Sahitya Parishat Office, Chamarajpet, Bangalore).
2. Jagannatha Vijaya by Rudrabhatta, Chapters 4, 5 and 6.
(Government Oriental Library, Mysore).
3. Sabara Sankara Vilasa by Shadakshara Kavi (whole).
(Satya Sodhana Book Depot, Fort, Bangalore).
4. Pushpadanta Purana by Gunavarma, Chapters 4, 5 and 6,
(Madras University Publication).
5. Mitravinda Govinda Nataka by Singararya (Kavyakala-
nidhi Office, Mysore).
6. Chikkadevaraja Vamsavali by Tirumalarya (Kavyakala-
nidhi Office, Mysore).
7. Mudra Manjusha by Kempu Narayana (Wesleyan Press,
Mysore).
8. Vimarshe, Parts I and II by M. Venkatesa Ayyangar, M.A.
(Viswakarnataka Publishing House, Chickpet, Banga-
lore City).

*Final—**Grammar, Prosody and Poetics.—*

1. Kavirajamarga (Madras University Publication).
2. Rasaratnakara by Salva (Madras University Publication).
3. Sabdamanidarpana by Kesi Raja (Basel Mission Book
Depot, Mangalore).
4. Chhandassu by Nagavarma (Basel Mission Book Depot,
Mangalore).
5. Apratima Veera Charite by Tirumalarya (Kavyakalanidhi
Office, Mysore).
6. Karnataka Vyakaranopanyasa Manjari by R. Raghunatha
Rao (Viswakarnataka Publishing House, Chickpet,
Bangalore).
7. Muddana (Viswakarnataka Publishing House, Chickpet,
Bangalore).
8. Kannada Jaina Vangmaya by R. Tatachar (Saraswati
Printing Press, Mangalore).
9. Kavilakshmissa (Satya Sodhana Book Depot, Fort,
Bangalore).
10. Karnataka Kavi Charitre, Vols. I, II and III by R. Nara-
simhacharya, (Author, Malleswaram, Bangalore).

VIDVAN UNDER REGULATION 7-B.

Preliminary—

Poetry and Prose—

1. Nemi Jinesa Sangati by Mangarasa, Chapters 1 and 2. Edited by Santiraja Sastri (Vardhamana Power Press, Mysore).
2. Hannu Kayi by K. Sankara Bhatta (Bala Sahitya Mandala, Kodialbail, Mangalore).
3. Neeti Manjari, Part II by R. Narasimhacharya, Stanzas 1—100 (Author, Malleswaram, Bangalore).
4. Bhavachintaratna by Mallanarya (Kavyakalanidhi Office, Mysore).
5. Uttara Rama Charitra Natakada Kathe (Kavyakalanidhi Office, Mysore).
6. Kadambari Sangraha (whole) (Mysore University Publication).
7. Mrichhakatika Nataka by N. Subba Sastri (Satya Sodhana Book Depot, Fort, Bangalore).
8. Vimarshe, Parts I and II by M. Venkatesa Ayyangar, M.A., (Viswakarnataka Publishing House, Chickpet, Bangalore).
9. Bharata by Kumara Vyasa, Udyoga Parva (whole) (Satya Sodhana Book Depot, Fort, Bangalore).
10. Kavilakshmissa (Satya Sodhana Book Depot, Fort, Bangalore).

Grammar—

1. Kannada Kaipidi (Mysore University Publication), The portions pertaining to Grammar (i.e. Part 1 of Vol. I).
2. Sabdamanidarpana by Kesi Raja (Basel Mission Book Depot, Mangalore).

Final—

General Literature—

1. Adipurana by Pampa, Chapters 5 and 6 (Government Oriental Library, Mysore).
2. Jagannatha Vijaya by Rudrabhatta, Chapters 9 and 10. (Government Oriental Library, Mysore).
3. Grijja Kalyana by Hariharadeva, Chapters 7 and 8. (Kavyakalanidhi Office, Mysore).
4. Neminatha Purana by Nemichandra, Chapters 1, 2 and 3. (Kavyakalanidhi Office, Mysore).
5. Kumara Vyasa Bharata, Salya and Gada Parvas (Satya Sodhana Book Depot, Fort, Bangalore).

6. Pushpadanta Purana by Gunavarma, Chapters 4, 5 and 6. (Madras University Publication).
7. Ramaswamedha by Muddana (Kavyakalanidhi Office, Mysore).
8. Mudrarakshasa Nataka by Ramasesha Sastri (Satya Sodhana Book Depot, Fort, Bangalore).
9. Vicharane by Devudu Narasimha Sastri, M.A. (Editor, Makkala Pustaka, Bangalore City).
10. Nachiketha by C. K. Venkataramayya, M.A., LL.B., (B. Srinivasiengar, Printer, 3/34, Manavartepet, Bangalore).
11. Hindusthanada Prachina Rajya Paddhatigalu, by V. H. Vodeyar (Navajeevan Book Depot, Dharwar).

Grammar, Prosody, Rhetoric, etc.—

1. Kannada Kaipidi (Mysore University Publication) (portions pertaining to Alankara, etc., i.e. Part 3 of Vol. I).
2. Sabdanusasana by Bhattakalanka, omitting the commentary (Government Oriental Library, Mysore).
3. Kaviraja Marga (Madras University Publication).
4. Rasaratnakara by Salva (Madras University Publication).
5. Apratima Veera Charite by Tirumalarya (Kavyakalanidhi Office, Mysore).
6. Chhandombudhi by Nagavarma (Kavyakalanidhi Office, Mysore).
7. Karnataka Vyakaranopanyasa Manjari by R. Raghunatha Rao (Viswakarnataka Publishing House, Fort, Bangalore).
8. Ranna Kavi Prasasthi (Viswakarnataka Publishing House, Bangalore).
9. Kannada Jaina Vangmaya by R. Tatachar (Saraswathi Printing Works, Mangalore).
10. Karnataka Kavi Charitre by R. Narasimhacharya, Volumes I, II and III (Author, Malleswaram, Bangalore).

MALAYALAM, 1938.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary—

Poetry—

1. Kannassa Ramayanam, Sundarakandam, edited by Rao Sahib Ulloor S. Parameswara Ayyar Avl., M.A., B.L., Trivandrum.
2. Bharatam, Bheeshma Parvam, by Ezhuttacchan, (Any Press).

3. Umakeralam—First three sargas—by Rao Sahib Ulloor S. Parameswara Ayyar Avl., M.A., B.L., Trivandrum.
4. Koccu Seeta, Vallathole, Mulakunnattukavu, Cochin State.
5. Kirmeeravadham, Kathakali, edited by P. Krishnan Nair, 43, Bazaar Road, Mylapore, Madras.

Drama—

Mṛcchakatikam by Varavoor Samu Menon. (V. Narayana Menon, Pandit, Government Brennen College, Tellicherry.)

Prose—

1. Kalidasan by V. Raja Raja Varma, Vycome, Travancore.
2. Sarada by Chandu Menon, (V. V. Publishing House, Ernakulam).
3. Katha Soudham, Vol. III, by A. Narayana Poduval, (Ramanuja Printing Works, Trichur).

Final—

1. Leelatilakam, by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur, Cochin State.
2. Kerala Paniniyam, by A. R. Raja Raja Varma, M.A., (B. V. Book Depot, Trivandrum).
3. Kerala Kaumudi, by T. M. Kovunni Nedungadi (T. M. Kovunni Nedungadi, Teacher, Zamorin's College, Calicut).
4. Bhasha Bhushanam, by A. R. Raja Raja Varma, M.A., (B. V. Book Depot, Trivandrum).
5. Vrttamanjari, do. do.
6. Sahitya Caritam by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
7. Malayala Bhashayum Sahityavum, by Attur Krishna Pisharoti (University of Madras).
8. Dravida Vrttangal, by Appan Thampuran, Ayyanthole Palace, Trichur.
9. Sahitya Saram, by Nantyar Veetil K. Parameswaran Pillai, M.A., Thampanoor, Trivandrum.

VIDVAN UNDER REGULATION 7-B.

Preliminary—

1. Leelatilakam, by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
2. Kerala Kaumudi, by T. M. Kovunni Nedungadi, (T. M. Kovunni Nedungadi, Teacher, Zamorin's College, Calicut).
3. Prayoga Deepika, by P. K. Narayana Pillai, B.A., B.L., (S. R. V. Press, Quilon).

Drama—

1. Manipravala Sakuntalam by Kerala Varma, (B. V. Book Depot, Trivandrum).
2. Malathee Madhavam by Kottarathil Sankunni, Kottayam.

Poetry—

1. Krshna Gātha by Cherusseri (Rukmanee Swayamvaram) —Edition by P. K. Narayana Pillai, B.A., B.L. (S. R. V. Press, Quilon).
2. Bharatam by Ezuttacchan—Salyam and Santhi Parvams (Any Press).
3. Kuslavopakyanam, by Purayanoor Namboodiripad, (Mangalodayam Press, Trichur).
4. Unnuneeli Sandesam, edited by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
5. Uttara Swayamvaram, Kathakali, by Irayimman Thampi, (Any Press).

Prose—

1. Vidyavivekam, by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
2. Sahitya Manjushika, by V. Raja Raja Varma, (Mangalodayam Press, Trichur).
3. Vijnana Deepika, Part II, by Rao Sahib Ulloor S. Parameswara Ayyar, M.A., B.L., Trivandrum.
4. Akbar, by Kerala Varma, (B. V. Book Depot, Trivandrum).

Final—

1. Kerala Paniniyam, by A. R. Raja Raja Varma, (B. V. Book Depot, Trivandrum).
2. Bhasha Bhushanam, by A. R. Raja Raja Varma, (B. V. Book Depot, Trivandrum).
3. Vrttamanjari, by A. R. Raja Raja Varma, (B. V. Book Depot, Trivandrum).
4. Kerala Bhasha Sahitya Caritram, Parts I and II, by R. Narayana Panikkar, B.A., L.T., (S. T. Reddiar & Sons, Quilon).
5. Nataka Pravesika, by A. D. Harisarma, Ernakulam.
6. Bhashayum Sahityayum, by Attur Krishna Pisharoti (University of Madras).
7. Sahitya Caritram, Part I, by Attur Krishna Pisharoti, Sri Thilakam, Poothole, Trichur.
8. Sahitya Saram, by K. Parameswaran Pillai, M.A., Nantiyar Veedu, Thampanoor, Trivandrum.

9. Dravida Vrttangal, by Appan Thampuran, Ayyanthole Palace, Trichur.
10. Novel Sahityam, by M. P. Paul, Trichur.
11. Nirupanasahityam, by Rev. Mattom, Changanacherry.
12. Thunchath Ezuttacchan, by P. K. Narayana Pillai, B.A., B.L., (S. R. V. Press, Quilon).

Poetry—

1. Rama Caritram, 1—9 Patalams.
2. Bhasha Naishada Champu, edited by P. Padmanabha Menon, B.A., B.L., Vakil, Ernakulam.
3. Malayam Kollam by Kochunni Thampuran, (Mangalodayam Press, Trichur).
4. Janaki Parinayam, by C. Chathu Kutty Mannadiar (Mangalodayam Press, Trichur).
5. Ascarya Chudamani, by Kunhi Kuttan Thampuran, (B. V. Book Depot, Trivandrum).
6. Kalakeya Vadham, Kathakali, edited by P. Krishnan Nair, 43, Bazaar Road, Mylapore, Madras.
7. Kucela Vrttam and Krishna Vilasam, edited by C. Achyutha Menon, B.A., (University of Madras).
8. Kucela Vrttam, Vancipattu, by Ramapurath Warriar. (Any Press).

Munshi-i-Fazil Examination, 1938.

Preliminary.—

Mazamini-Hali.

Ibnul Waqt.

Musaddasi—Hali.

Kulliyath-i-Akbar, Part III.

Sarmaya-i-Danish by Ja'fari.

Qissa-i-Haji Baba, 1st half.

Mardi Khasis.

Lisanul Ghayb by Ja'fari.

Mathnavi Maulana Rumi, 1st Half Daftar.

At Tariqatul Muhtakirah, Part IV.

Final.—

Hayath-i-Jawid, Part II.

Yadgari Ghalib.

Bangi Dira.

Intikhabi Kalami Mir by Abdul Haq.

Nathrah.

Siyahat Nameh Ibrahim Beg, 1st Volume. (Ed. by
Anwar-i-Ahmadi Press, Allahabad).**Shir'a.**

Payami Mashriq.

Qasa'id-i Qa'ani Alif and Ba, Edited by Ja'fari.

Shi'rul Ajam, Part V.

Tarikhi Adabiyathi Iran.

Sukhandani-Fars, Part II.

Majaniul Adab, Vol. I.

Afzal-ul-Ulama Examination, 1938.*Preliminary.*—

Tafsir Muhammad Abduh—Volume II.

Sharh-i-Wiqayab, 1st half.

Jami'ut Tirmidhi—First half.

Risalatut Tawhid by Abduh.

Qasidatul Burdah.

Mu'allaqat by Tarafa and Zuhayr.

Al-Fakhari.

Maqmat-i-Badi'i—1st 14 Maqamahs.

Usul-ush-Shashi.

Tahzibul-Mantiq.

For those who do not offer Urdu Translation.—

Kalilah-wa-Dimna.

Final.—Tafsir Ruhul Ma'ani, Vols. I and II. (Abdus Samad &
Sons, Sayyidwade, Surat, or Sharfuddin Alkutabi,
Bendi Bazar, Bombay 9).

Sahi-hul Bukhari—1st five Ajza.

Muqaddima-i-Ibn-i-Salah.

Bidayathul Mujtahid by Ibn Rushd—1st Vol.

Nurul-Arwar-Sunnah, Ijma' and Qiyas.

Maqamat-i-Hariri—First ten Maqamahs.

Nasimul Kalam, (available at Messrs. Jafari Bros., Anwar-i-Ahmadi Press, Allahabad).

Tarikhu-Adabil Lughatil-Arabiyyah by Jurji Zydan—1st Volume.

Banat Su'ad.

Diwan-i-Mutanabbi—Radif Alif and Ba.

Al-Hamasa-Babul Hamasa-wal Marathi.

Tarikhu Umamil Islamiyyah by Alkhizari—Volume II.

Majmu'ul Adab Fi Funnil Arab by Al-yaziji.

For those who do not offer Urdu Translation:—

Fatat-i-Ghassan.

Note :—All the above books are available at the Islamiah Book Depot, Kurnool.

Title of Malpan, 1938.

Preliminary Examination.—

Prose.—

1. History of Syriac Language and Literature.
2. Story of St. Ignatius of Antioch—Acts of Martyrs and Saints—Vol. III (Pages 199 to 215).
3. Epistles of St. Ignatius.
4. Acts of the Apostles.
5. Youno. As printed in Ethicon (Ebhedjan Paris).
6. History of Syriac Language—Wright.

Poetry.—

1. The Feast of Epiphany—Hymns and Sermons by Mar Ephrem. Edited by Thomas Joseph Lamy, Tomus I. MDCCCLXXXII.
2. The Crucifixion Do.

Final Examination.—

Prose.—

1. Book of Job.
2. Book of Ecclesiastes.
3. Bar-Habraeus. Nomo-Canon, Chapters I to VII.

Poetry.—

Mar Ephrem—Hymn on Abraham Kidunaia. Hymns and Sermons—Edited by Thomas Joseph Lamy—Tomus III. MDCCCLXXXIX.

Title of Soppar, 1938.**SYRIAC—(Main).*****Preliminary Examination.*—*****Prose.*—**

1. Gospel of St. Luke.
2. First Epistle of St. Paul to Corinthians.
3. Chrestomathy—Pages 1 to 37. Printed at Kunamavoo.

***Poetry.*—**

St. Ephrem—Hymn of Julian Saba. Hymns and Sermons.
Edited by Thomas Joseph Lamy—Tomus III,
MDCCCXXXIX.

History of Syriac Literature—Wright.

***Grammar.*—**

1. Noldeke: Compendious Syriac Grammar.
2. The Beginner's Grammar of Syriac by Rev. Fr. M. T. Abraham.

Final Examination.*—**Prose.*—**

1. Book of Proverbs. Old Testament.
2. Amos. Old Testament.
3. Epistles of St. Paul to Hebrews.
4. The two Epistles of St. Peter.

HEBREW—(Subsidiary).***Preliminary Examination.*—**

1. Book of Jonah.
2. Grammar—Moses Rath.
3. Proverbs. Chapters I to X.

***Final Examination.*—**

1. Psalms 118 to 126.
2. Exodus. Chapters I to X.
3. Davidson's Hebrew Grammar.

Oriental Titles Examinations, 1939.

SANSKRIT, 1939.

For all the Branches of the Siromani Course and for the Vidvan courses, the same as for 1938, (*vide* pages 756-763).

MARATHI, 1939.

The same as for 1938, (*vide* page 763)

ORIYA, 1939.

The same as for 1938, (*Vide* page 765)

HINDI, 1939.

The same as for 1938, (*Vide* page 767)

TAMIL, 1939.

The same as for 1938 (*vide* page 769) with the following changes:—

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Substitute Nanmanikkadikai, Stanzas 1 to 50 for Palamoli, Stanzas 1 to 50.

Under *Prose* add Buddhacarittiram by Mahamahopadhyaya Dr. V. Swaminatha Ayyar.

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Substitute Amudambikai-pillaittamil for Sekkilar-pillaittamil and Singalc-ciledai-venba for Kalasaic-ciledai-venba.

Add under *Prose*—(1) Sekkilar by C. K. Subrahmanya Mudaliyar, Pleader, Coimbatore.

(2) Tirumukappakudi by Ramalinga Svamigal. (Teachers' Publishing House, Madras).

Final.—

Substitute Kurinjikkali for Mullaikkali.

TELUGU, 1939.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry (Old).—

1. Bharatam—Adiparvamu—Canto VII.

2. Bharatam—Udyogaparvamu—Canto III.

3. Uttaraharivamsamu by Nachana Somanadha, I & II.
4. Bhagavatamu—IX (259-332)—Sreeramacharitamamu.
5. Raghavapandaviyam I & II with Kavi Bhavaprakasika by E. Bhashyakacharyulu, (Ananda Press, Madras.)

Poetry (Modern).—

6. Veerasimhudu by V. Ch. Seetharamaswami Sastri, University College, Waltair.

Prose.—

7. Nayapradeepam 1-30 pages with commentary by Vidvan D. V. Krishnamurti, M.A., Theosophical College, Madanapalli.
8. Ramayanavachanamamu, Balakandamu by Tevapperu malayya, (Ananda Press, Madras.)
9. Kadhasaritsagaramamu, Part I, pages 91-302, by V. Venkataraya Sastri, Mallikeswarar Street, George Town, Madras.

Drama.—

10. Uttararamacharitra by M. Suryanarayana Sastri, University College, Waltair.

Grammar, Prosody and Poetics.—

11. Balavyakaranamu.
12. Praudhavyakaranamu.
13. Kavijanasrayamu.
14. Sahityadarpanamu, Chapters 1—4. by V. Venkataraya Sastri, Mallikeswarar Street, George Town, Madras.

Final.—

Poetry.—

1. Basavapuranamamu, I and II.
2. Sringera Naishadamu, I and II.
3. Prabhodachandrodayamu, by Nandi Mallaya and Ghanta Singaya, I.
4. Vasucharitramu, IV and V.
5. Swapnanubhuti by Durbha Ramamurti, M.A., V. R. College, Nellore.

Drama.—

6. Mricchakatika by Tirupati Venkatakavulu, Kadiyam, East Godavari Dt.

Grammar, Prosody and Poetics.—

7. Andhrasabda Chintamani.
8. Appakaviyam.
9. Kuvalayanandasaramu by Bulusu Venkataramana Sastri, Kellet High School, Triplicane, Madras.
10. Chintamani Vishaya Parisodhanamu by V. Ch. Sitarama Sastry, (Vavilla & Sons, Madras).

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Poetry (Old).—

1. Bharatam, Santiparvam, Canto III.
2. Kumarasambhavam by Nannechodadeva, Canto I (available at S. V. V. Press, Vizianagram).
3. Jaimini Bharatam, I and II.
4. Raghavapandaviyam, I and II.
5. Vishnumayanatakam, Canto V—by Radhamadhava Kavi (Madras University Publication).
6. Nilasundariparinayamu by Kuchimanchi Timma Kavi.

Poetry (Modern).—

7. Soundaranandam by P. Lakshmikantham, M.A., University College of Arts, Waltair.

Prose.—

8. Sahityatattvavimarsanam by J. Satyanarayanamurti, M.A., "Andhra Patrika" Office, Madras.
9. Asokuni Dharma Sasanamulu by Dr. C. Narayana Rao, M.A., Ph.D.—Introduction and Khalsi Inscriptions (Sadhana Book Depot, Anantapur).
10. Kalidasuni Kalapratibhalu by K. Ramakrishnayya, O. R. Institute, University of Madras.
11. Rajyasree by E. Bhashyakacharyulu, Hindu High School, Triplicane, Madras.

Drama.—

12. Sakuntalam by Sreemati K. Kanakamma, Queen Mary's College, Madras.

Grammar, Prosody and Poetics.—

13. Balavyakaranamu.
14. Praudhavyakaranamu.
15. Sahityadarpanamu, Chapters 1—4, by V. Venkataraya Sastri, Mallikeswarar Street, George Town, Madras.
16. Kavyalankarachudamani by Vinnakota Peddanna.
17. Laghusiddhanta Kaumudi in Telugu—by Ch. Suryanarayana Sastri, Sandhi, Samasa, Prakaranas only (available at Vavilla & Sons, Madras).

Final.—

Poetry.—

1. Bharatam, Anusasanika Parvam, Canto II.
2. Basava Puranam, Cantos I and II—a dvipada Kavya by Palkuriki Somanadha.
3. Harischandranalopakhyanam, Canto II.
4. Bhagavatam, 1st Skandham, Parikshit Charitram, verses 383—529.
5. Amuktamalyada, VI, 1—66 verses.
6. Prabhavati Pradyumnam, I and II.
7. Kamavilasam by S. V. Sastri, M. A., Nizam's College, Hyderabad.

Prose.—

1. An Essay on the sources of Prabhavati Pradhyumnam by P. Lakshmikantam, (Madras University Publication).
2. Saraswatavyasamulu by K. Ramakrishnayya, O. R. Institute, University of Madras.
3. Nayapradeepam, 1 to 30 pages with commentary by Vidvan D. V. Krishnamurti, Telugu Lecturer, Theosophical College, Madanapalli.

Drama.—

Uttararamacharitramu by M. Suryanarayana Sastri, University College, Waltair.

Grammar, Prosody and Poetics.—

1. Andhrasabdachintamani.
2. Adharvanakarikavali.
3. Appakaviyamu (except cantos II and V).
4. Dasarupakamu by M. Suryanarayana Sastri, Cantos III & IV.
5. Kuvalayanandasaramu by Bulusu Venkataramana Sastri, Kellet High School, Triplicane, Madras.
6. Narasabhupaliyamu.

History of Language and Literature.—

1. Dravidian Languages by Vidvan G. J. Somayaji, College of Arts, Waltair.
2. Bhashotpatti Kramamu by K. Ramakrishniah, O. R. Institute, University of Madras.
3. Andhravangmayacharitra sangrahamu (Vavilla & Sons, Madras.)

KANNADA, 1939.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry and Prose.—

1. Vikramarjuna Vijaya by Pampa. Chapters 11 and 12 (Karnataka Sahitya Parishat Office, Bangalore City).
2. Jagannatha Vijaya by Rudrabhatta. Aswasas 7, 8 and 9. (Mysore Government Oriental Library Edition).
3. Sabara Sankara Vilasa by Shadaksharadeva, (Satya Sodhana Book Depot, Fort, Bangalore).
4. Pushpadanta Purana by Gunavarma. Aswasas 7, 8 and 9. (Madras University Publication).
5. Mitravinda Govinda Nataka by Singararya. (Kavya Kalanidhi Office, Mysore).
6. Chikkadevaraja Vamsavali by Tirumalarya. (Kavya Kalanidhi Office, Mysore).
7. Mudra Manjusha by Kempu Narayana. (Wesleyan Mission Press, Mysore).
8. Vimarshe Parts I, II and III by M. Venkatesa Ayyangar, M.A., (Bala Sahitya Mandala, Mangalore).
9. Jeevana Soundarya and Sahitya by D. V. Gundappa. (Bala Sahitya Mandala, Mangalore).
10. Karnataka Samskriti by Devudu Narasimha Sastry, M.A., (Satya Sodhana Book Depot, Fort, Bangalore).

Final.—

Grammar, Prosody, Poetics, and Literary Criticism.—

1. Kaviraja Marga. (Madras University Publication).
2. Rasaratnakara by Salva. (Madras University Publication).
3. Sabdamanidarpana by Kesiraja. (Basel Mission Book Depot, Mangalore).
4. Chhandombudhi by Nagavarma. (Basel Mission Book Depot, Mangalore).
5. Apratimaveera Charita by Tirumalarya. (Kavya Kalanidhi Office, Mysore).
6. Karnataka Vyakaranopanyasa Manjari by R. Raghunatha Rau. (Satya Sodhana Book Depot, Fort, Bangalore).
7. Abhinava Pampa—(by various authors). (Karnataka Sangha, Karnataka College, Dharwar).

8. Kavilakshmisa—(by various authors). (Satya Sodhana Book Depot, Fort, Bangalore).
9. Kannada Jaina Vangmaya by R. Tatachar. (Saraswathi Printing Works, Mangalore).
10. Karnataka Kavi Charite, Volumes I, II and III by R. Narasimhacharya. (Author, Malleswaram P. O., Bangalore).

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Poetry and Prose.—

1. Yasodhara Charitre by Janna. (Kavya Kalanidhi Office, Mysore).
2. Tapaswini by Rajamma. (Satya Sodhana Book Depot, Fort, Bangalore).
3. Neethi Manjari Part I, Stanzas 1—100 by R. Narasimhachar, (Author, Malleswaram P. O., Bangalore).
4. Bhava Chintaratna by Mallanarya. (Kavya Kalanidhi Office, Mysore).
5. Uttara Rama Charitra Natakada Kathe. (Kavya Kalanidhi Office, Mysore).
6. Kadambari Sangraha. (Mysore University Publication).
7. Mricchakatika Nataka by N. Subba Sastri. (Satya Sodhana Book Depot, Fort, Bangalore).
8. Jeevana Soundarya and Sahitya by D. V. Gundappa. (Bala Sahitya Mandala, Mangalore).
9. Bharata by Kumara Vyasa—Udyoga Parva. (Mysore Oriental Library Edition).
10. Kavilakshmisa by various Authors. (Satya Sodhana Book Depot, Fort, Bangalore).
11. Karnataka Samskriti by Devudu Narasimha Sastri, M.A. (Satya Sodhana Book Depot, Fort, Bangalore).

Grammar.—

1. Kannada Kaipidi, Part 1, Volume I, Portions pertaining to Grammar only. (Mysore University Publication).
2. Sabdamanidarpana by Kesiraja. (Basel Mission Book Depot, Mangalore).

Final.—

General Literature.—

1. Adipurana by Pampa. Chapters 6 and 7. (Government Oriental Library, Mysore).
2. Jagannatha Vijaya by Rudrabhatta. Aswasas 11 and 12. (Mysore Government Oriental Library Edition).
3. Giriya Kalyana by Hariharadeva. Chapters 7 and 8. (Satya Sodhana Book Depot, Fort, Bangalore).

4. Neminatha Purana by Nemichandra. Chapters 1, 2 and 3, (Kavya Kalanidhi Office, Mysore).
5. Bharata by Kumara Vyasa—Bhishma Parva. (Mysore Government Oriental Library Edition).
6. Pushpadanta Purana by Gunavarma. Chapters 7, 8, 9. (Madras University Publication).
7. Ramaswamedha by Muddana. (Kavya Kalanidhi Office, Mysore).
8. Mudra Rakshasa Nataka by M. Ramasesha Sastri. (Satya Sodhana Book Depot, Fort, Bangalore).
9. Birugali by K. V. Puttappa, M.A. (Satya Sodhana Book Depot, Fort, Bangalore).
10. Nachiketha by C. K. Venkataramayya, M.A., LL.B. (Satya Sodhana Book Depot, Fort, Bangalore).
11. Hindusthanada Prachina Rajya Paddhathigalu by V. H. Vodeyar. (Navajeevan Grantha Mala Office, Dharwar).
12. Socrates-na Koneya Dinagalu—(Last days of Socrates)—by A. N. Murti Rao, M.A. (Mysore University Publication).

Grammar, Prosody, Poetics and Literary Criticism.—

1. Kannada Kaipidi, Part 3, Volume I. (Portions pertaining to Alankara etc. (Mysore University Publication).
2. Sabdanusasana by Bhattakalanka—(omitting commentary) (Mysore Government Oriental Library Edition).
3. Kaviraja Marga. (Madras University Publication).
4. Rasaratnakara by Salva. (Madras University Publication).
5. Apratima Veera Charita by Tirumalarya. (Kavya Kalanidhi Office, Mysore).
6. Chhandombudhi by Nagavarma. (Kavya Kalanidhi Office, Mysore).
7. Karnataka Vyakarnopanyasa Manjari by R. Raghunatha Rau, (Satya Sodhana Book Depot, Fort, Bangalore).
8. Ranna Kavi Prasasthi by various Authors. (Satya Sodhana Book Depot, Fort, Bangalore).
9. Kannada Jaina Vangmaya by R. Tatachar. (Saraswathi Printing Works, Mangalore).
10. Abhinava Pampa by various Authors. (Karnataka Sangha, Karnataka College, Dharwar).
11. Muddana by various Authors. (Satya Sodhana Book Depot, Fort, Bangalore).
12. Vimarshe—Parts I, II, and III by M. Venkatesa Ayyangar, M.A., (Bala Sahitya Mandala, Mangalore).
13. Karnataka Kavicharite, Volumes I, II and III by R. Narasimhacharya. (Author, Malleswaram P.O., Bangalore).

792 TEXT-BOOKS IN MALAYALAM FOR VIDVAN [APP
TITLE EXAMINATION, 1939.

MALAYALAM, 1939.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry.—

Same as for the year 1938 (*vide* p. 778), with the exception of No. 3.

Substitute "Rukmangada Charitham" 1 to 3 Sargams for No. 3.

Drama.—

Charudathan by A. R. Raja Raja Varma, M.A., (Kamalalaya Printing Works, Trivandrum).

Prose.—

1. Sahitya Bhooshanam by P. N. Kunhan Pillai, M. A., (Selections 4 to 9 (both inclusive)—V. V. Book Depot, Chalai, Trivandrum).

2. Durgesanandini by C. S. Subrahmanian Potti, M.A., (C/o. Malayala Rajyam, Quilon).

Final.—

Same as for the year 1938 (*vide* p. 779) with the exception of No. 9.

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

The same as for the year 1938, (*vide* p. 779), with the exception of No. 2.

For No. 2, substitute Vyakaranamitram by M. Seshagiri Prabhu, M.A., Revised Edition, (Basel Mission Press, Mangalore).

Drama.—

The same as for the year 1938, (*vide* p. 780).

Poetry.—

The same as for the year 1938, (*vide* page 780) with the exception of No. 5.

For No. 5, substitute 'Nalacharitam Āttakatha': 2nd and 3rd day's plays.

Prose.—

The same as for the year 1938, (*vide* page 780) with the exception of Nos. 3 and 4.

For 3, substitute Prabhandha Deepika, by Joseph Mundasseri, M.A., St. Thomas' College, Trichur.

For No. 4, substitute "Pourusha Prabhavam" by V. M. Govinda Menon and V. T. S. Menon, (Sadkatha Publishing House, Chalapuram, Calicut).

Final.—

The same as for the year 1938, (*vide* page 780) with the following changes:—

For No. 8, substitute 'Koottum Kootiyattavum' by Ammaman Thampuran, B.A., L.T., C/o. Manager, Lakshmeebhai, Trichur).

For No. 10, substitute 'Parvathi Swayamvaram'—Pana—by Kunchan Nambiyar—(K. Ramunni Nair, Vanniyamkulam, Via Shoranur).

No. 11 to be dropped and 12 to be renumbered as No. 11.

Afzal-ul-Ulama Title Examinations, 1939.

PRELIMINARY.

Safwatul 'Irfan fi Tafsiril Qur'an,

or

Tafsir-al manar Vol. II.

Jami 'ut-Tirmidhi.

Nukhbatul Fikr.

Al-mizan by Imam Sha'rani.

or

Sharhi Wiqayah—First half.

Alhidayat—Ilas Siratil Mustaqim by Azzanati.

Al Basayarun—Nasiriyyah Fil Mantiq.

Albukhala by Al-Jahiz.

Ruhul 'Imran by Farriaj Azhari.

Al-Mu'allaqat-al-'Asher by Ash Shanqiti.

Al Mukhtaru min Shi'ri Ahmad Shawqi.

Humatul Islam Vols. 1 and 2.

An Nahvul Wadih Lil Madaris-i-Thanaviah (3 Vols.).

Almisbah Fil Ma'ani wal Bayan Wal Badi'.

Usulush Shashi.

FINAL.

Tafsir-i-Kashshaf—1st half.

or

Tafsir-i-Ruhul Ma'ani, Vols. I and II.

Tafsir-i-Itqan, Vol. 1.

Sahihul Bukhari—First twelve Ajza.

Muqaddima-i-Ibni Salah.

or

Muqaddimal-Sahih Muslim.

Miftahus Sunnah.

Bidayathul Mujtahid by Ibn Rushd—Vols. I and II.

or

Hidayah, Vols. I and II.

Musallamuth Thubut.

Nasimul Kalam.

Faysalut Tafragh Baynal Islam waz Zandaqah by
Ibn Rushd.

Jawahiral Adab by Al-Hashimi.

Muhazaratu Tarikhil-umamil Islamiyah by Al Khizaari,
Vol. II.

Tarikhul Adabil Lughatil 'Arabiyyah by Zaydan, Vols. 1
and 2.

Sullamul 'ulum.

Falsafatu Ibn-i-Rushd—Faslul Maqal and Alkashf'An
Manahijil Adillah.

Az Zakhirah by At—Tusi.

Dalayat-ul-I'jaz by Jurjani.

Afzal-ul-Atibba Title Examinations, 1939.

PRELIMINARY.

Kulliyat-i-Qanuni Shaykh.

Kamilus Sana'ah, Vol. 1. Maqalahs 1, 2 and 3.

Mabadiut Tashrih wal Fasologiah wal Hygin.

Wajibatut Tabib by Duktur Abdul Aziz.

Nafisi-Fanni Thani.

'Umdathul Mutabbibin fi Fannis Saydalah.

Qawa'idu Hifzis Sihat by Yuhanna Afandi.

Kitab Tashrib wa Manafi 'ul A'za by Ghulam Jilani.

Miftahul Khazayin.

Dehli Ki Dawa Sazi.

Makhzan-i-Hikmat by Ghulam Jeelani-Hifzani-Sihat and
portions related to it.

Tarikhul Atibba.

Tabaqatul Atibha by Ibn-i-Abi Usaybi'ah.

Muqaddimal-Makhzanul Adwiyah,

The following books are recommended for study and reference:—

Kulliyath-i-Nafsi.
Kulliyath-i-Sadidi.
Nayari-'Azam.
Kifayathul 'wam fi Hifzis Sihati wa Tadbirii Asqam.
Muhit-i-'Azam.
Mukhazinut Ta'Lim.
Qarabadin-i-Qadri.

FINAL.

Sharhi-Asbab.
Kamilus Sana'ah.
Qanun-i-Shayk—Amrazi-Sadar wa rih and Hummayath.
Kitabul Mu'ayanathi wal 'Alamati-Tashkhisiah.
Kitabut Tashkhis, Parts I and II.
Lamahatus Sa 'adah Fifannil Wiladah by Dr. 'Isa Basba Hamdi.
Al'ilajul Jarrahi.
Kitabul Jarahat.
Ta'limul Qabilah by Abdur Razzaq.
Tibbi-Qanuni-medical jurisprudence—Urdu.
Makhzani-Hikmat by Ghulam Jeelani.
Al'inayathu bit Tifi Fis Sihati wal Maraz.
Kitabul Bathulujiyah.
As sirrul Maknun Fi Abhasit Ta'un.

The following books are recommended for study and reference:—

Al-Khulasatut Tibbiyah Fil Amrazil Batiniyah.
Iksir-i-'Azam
Risala-i-Amrazi Sibyan.
Tabib-i-Atfal.

Munshi-i-Fazil Title Examinations, 1939.

PRELIMINARY.

Persian Prose:—

Ahwal-i-Ibn-i-Yamin by Rashid Yasimi.
Insha-i-Abul Fadl First Daftar.
Chahar Maqala by Nizami Samarqandi.

Persian Poetry:—

- Rumuzi Bayhkudi by Iqbal.
 Nasim-i-Shimal, Vol. II.
 Qasayid-i-Qa'ani Radifs Alif and Ba.
 Rustum wa Suhrab—Selections from Shahnamā....

Non-detailed Study:—

- Qissa-i-Haji Baba Isfahani.
 Siyasat Nameh Nizamul Mulk Tusi.

Grammar, Etc.:—

- Kanzul Balaghat.

Islamic History:—

- Tarikhul Ummat, Vols. 1—3.

Urdu Text-books:—

- Khudai Faujdar.
 Ibnul Waqt.

FINAL.

Persian Prose:—

- Waq'a'i Ni'mat Khan-i-'Ali.
 Akhlaq-i-Jalali, excepting portions related to Music.
 Iran Namah, excluding portions related to Old Persian.

Persian Poetry:—

- Javid Namah.
 Makhzan-i-Asrar Nizami.
 Diwan-i-'Andalib.

or

- Ghazaliyyat-i-Naziri.

Non-Detailed Study:—

- Siyahat Nameh. Ibrahim Beg.
 Baynavayan, Vols. 1, 2 and 3. (Translation of Victor Hugo's Les Misérables).

History of Persian Language and Literature:—

- Tarikh-i-Adabiyya-i-Iran by Humai Asfahani, Vols. 1 and 2.
 Shi'rul 'Ajam, Vols. IV and V.

Islamic History:—

- Tarikh-i-Islam by Amir Ali.

Grammar, Rhetoric and Prose:—

- Khazinatul Fawa'id, Vol. II.

Urdu Text-books:—

Taubatun Nasuh.

Jami-Sarshar.

Adib-i-Fazil Title Examinations, 1939.**PRELIMINARY.***Urdu Prose and Poetry:—*

Hayathi Sa'adi.

Maqalati Hali, Vol. I.

Bal-i-Jibrail.

Kulliyath-i-Akbar, Vol. I.

Abi-Hayath by Azad.

Non-Detailed Study:—

Hayath-i-Javid.

Grammar, Etc.:—

Qawa'idi-Urdu by Abdul Haq.

Islamic History:—

Khulafai-Rashidin.

Tarikh-i-Sultanati Khudadad.

Persian Text-books:—

Siyasat Nameh Nizamul Mulk Tusi.

Akhlai Muhsini.

MALAYALAM.

1. Raghuvansacharitam, by C. Kunhirama Menon, (Mangalodayam Press, Trichur—Price 0-8-0).
2. Kundalatha by T. M. Appu Nedungadi, B.A., B.L., (Vidyavilasam Press, Calicut—Price 0-10-0).

TAMIL.

1. Veeramanagar by R. P. Setu Pillai, B.A., B.L., (Publisher: Hilal Press, Tinnevely—Price Re. 1).
2. Kannaki by Karmegha Konar, (E. M. Gopalakrishna Kone, Madras and Madura—Price about 12 annas).

FINAL.*Urdu Prose and Poetry:—*

Muqaddima-i-Shi'ro Sha'iri.

Muwazina-i-Anis o Dabir.

Ifadat-i-Mahdi.

Yadgar-i-Ghalib.

Qasaid-i-Zauq.

Intikhab-i-Kalam-i-Sawda (Jamiyah Press).

Intikhab-i-Kalami Mir by Abdul Haq.

Bang-i-Dira.

Non-Detailed Study:—

Fasana-i-Azad, Vol. I.

Tahzibul Akhlaq, Vol. II.

History of Language and Literature:—

Tarikh-i-Adabiyati-Urdu.

Islamic History:—

Tarikh-i-Islam by Amir Ali.

Alfaruq.

Persian Text-books:—

Qissai-Haji Baba Isfahani.

MALAYALAM.

1. Sarada, by O. Chandu Menon, (V. V. Publishing House, Ernakulam—Price Re. 1).
2. Althihya Mala, Part I, (Manager, Lakshmi Bai, Trichur—Price Re. 1).

TAMIL.

1. Tamil Perumakkal Varalaru by S. Anavaratavinayakam Pillai, M.A., L.T., (Published by the Author, Vyasa Rao Street, Tyagarayanagar—Price Rs. 1-4-0).
2. Merumandirar by V. Venkatarajulu Reddiyar, Junior Lecturer in Tamil, (Modern Publishing House, Triplicane, Madras—Price Re. 1).

Tabib-i-Kamil Title Examinations, 1939.

PRELIMINARY.

Mufarrihul Qulub (Persian).

Mizan ut Tib Maqala, 1 and 2.

Tarjuma-i-Kulliyath-i-Qanun.

Tarjuma-i-Kamilus Sana'ah, Vol. 1. Maqalas 1, 2 and 3.

Tashrih-i-Kabir by Kabiruddin.

Tashrih wa Manafi'ul 'Aza.

Tarjuma-i-Nafisi—'Ilmul Adwiyah, Parts 1 and 2. By Hakim Kabiruddin.

Muqaddima-i-Makhzanul Adwiyah.
Makhzanul Adwiyah by Ghulam Jeelani.
Dehli Ki Dawa Sazi.
Miftahul Khaza'in.
Turjuma-i-Kulliyath-i-Qanun, Vol. 2.
Makhzan-i-Hikmat by Ghulam Jeelani.
(Portions related to Hifzani-Sihat).

Tarikhul Atibba.

The following books are recommended for study and reference:—

Tarjuma-i-Kulliyath-i-Nafsi.
Tarjuma-i-Kulliyath-i-Sididi.
Rumuzi 'Azam.
Muhit-i-'Azam.
Makhazinut Ta'alim.
Qarabadin-i-Qadri.

FINAL.

Kitabut Tashkhis, Parts 1 and 2.
Tarjuma-i-Sharhi Asbab (Tarjuma-i-Kabir).
Kitabul Bathulujia.
Tibb-i-Akbar (Persian).
Iksir-i-'Azam (Amradi Muta'addi).
Makhzani Hikmat, (Amradi Muta'addi).
Tarjuma-i-Hummayath-i-Qanun, Parts 1 and 2.
Tarjuma-i-Kamilus Sana'ah.
Kitabul Jirahat.
Kitab 'Aaml-i-Ihtiqan.
Tibbi-Qanuni—medical Jurisprudence.
Ta'limul Qabilah.
Tabib-i-Atfal.
Risalai-Amrad-i-Sibyan.

The following books are recommended for study:—

Iksir-i-'Azam.
Makhzan-i-Hikmat.

Title of Malpan, 1939.

Will be prescribed later.

Title of Soppar, 1939.

Will be prescribed later.

**800 TEXT-BOOKS IN SANSKRIT, MARATHI, ORIYA, [APP.
HINDI AND TAMIL FOR VIDVAN TITLE EXAMNS., 1940.**

Oriental Titles Examinations, 1940.

SANSKRIT, 1940.

The same as for 1839 (*vide* page 785) with the change that the कृत् and तद्धित sections (Text only) of the Siddhānta Kaumudī should be added to the list of text-books prescribed for Branch IV, Preliminary, it being understood that these sections should be dealt with in the paper on Prescribed books—Special I and that 25 marks should be allotted to questions on these two sections.

MARATHI, 1940.

The same as for 1939, (*vide* page 785)

ORIYA, 1940.

The same as for 1939, (*vide* page 785)

HINDI, 1940.

The same as for 1939, (*vide* page 785)

TAMIL, 1940.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry.—

Cilappadikaram, Maduraikkandam.

Nanmanikkadigai, stanzas 1-100.

Naladiyar, Arattuppai.

Appar Tevaram, Tirumurai IV, Padigams 1-25.

Nalayira-prabandham, Perumal Tirumoli.

Alakar Kalambakam.

Prose.—

V. G. Suryanarayana Sastri: Mativanan.

Mahamahopadhyaya Dr. V. Swaminatha Ayyar: Buddha Carittiram.

N. S. Kandiah Pillai: Pattuppattu Vacanam ('Otturumai' Office, Saidapet, Madras).

Grammar.—

Nannul Viruttiyural.

Akapporul-vilakkam.

Visakhapperumalaiyar's Yappilakkanam and Aniyilakkanam edited by S. Anavaratavinayakam Pillai (Ripon Press, Madras).

Final.—

Poetry.—

Pattuppattu, Cirupanarruppadai and Nedunalvadal.
Purananuru, stanzas 101-150.
Manimekhalai, Kadals 1-10.
Chintamani, Padumalyarilambakam.

Grammar.—

Tolkappiyam, Colladikaram, Ilampuranam.
Yapparungalakkarigal.
Purapporulvenbamalai, Padalams 1-9.
Dandiyalankaram.

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Poetry.—

Alakar-antadi.
Tiruvarunaikkalambakam (Saiva Siddhanta Works Publishing Society, 6, Coral Merchant Street, Madras).
Sengalunirvinayakar-pillait-tamil.
Tirukkalukkundrac-ciledai-venba, stanzas 1-50.
Tiruvalangal-tirattu by Pamban Kumaragurudasa Svamigal, Part II (Murugavel Book Depot, Royapettah).
Koticcurakkovai.
Tiruppuvananathar-ula } Edited by Mahamahopadhyaya
Tamil-vidu-dutu } Dr. V. Swaminatha Ayyar.
Villiputturar Bharatam, Adi, Sabha and Udyoga Parvams.
Tiruvilaiyal Puranam, Kudal Kandam.
Cevvantip-puranam.
Takkayagapparani, Kalikkuk-kuli-kuriyadu.
Tirukkural, Arattuppal, with Parimelalagar Ural.

Prose.—

Tolkappiya-poruladikara araycci by M. Raghava Ayyangar.
Tamilp-perumakkal-varalaru by S. Anavaratavinayakam Pillai.
Minakshisundaram Pillai Avargal Carittiram, Part I, by Mahamahopadhyaya Dr. V. Swaminatha Ayyar.
Tiruvarutpa, Vyakhyanappakudi, omitting pp. 64-201 and pp. 317-365 (Teachers' Publishing House, Coral Merchant Street, Madras).

Grammar.—

The same as for 1939, (*vide* page 785)

Final.—

Poetry.—

The same as for 1939, (*vide* p. 785) with the following modification.—

Substitute Periyapuram, Tirujnansambandamurti-nayanarpuranam, stanzas 1-500 *for* Tirunavukkarasu-nayanarpuranam.

Grammar, Prosody and Poetics.—

The same as for 1939, (*vide* page 785)

History of Language and Literature.—

The same as for 1939, (*vide* page 785)

VIDVAN UNDER REGULATION 7-D.

The same as for 7-B with the following additions:—

Preliminary.—

History of Tamil Country.—

The same as for 1939, (*vide* page 785)

Final.—

Inscriptions.—

The same as for 1939, (*vide* page 785)

TELUGU, 1940.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry.—

1. Bharatam, Virataparvamu, Canto II.
2. Kasikhandam, III.
3. Sringarasakuntalam by Pillalamarri Pinaveerabhadhrudu, 1 and 2 Aswasas.
4. Harischandranalopakhyanam, 1st Aswasa.
5. Gautami Mahatmyamu by Doma Venkataswami Gupta, Madras Christian College, Tambaram.
6. Ramachandrani Hampiyatra by Vidvan G. J. Somayaji, M.A., L.T., University College of Arts, Waltair.

Prose.—

1. Sreeramavijayamu by Kasibhotla Subbayya Sastri Garu, Cocanada.
2. Nayapradeepam, 1-30 pages by K. Ramachandrakavi with commentary by Vidvan D. V. Krishnamurti, M.A., Theosophical College, Madanapalli.

3. Natakopanyasamulu by R. Anantakrishna Sarma, Maharaja's College, Mysore.
4. Asokuni Dharmasasanamulu (Introduction and Khalsi Inscriptions) by Dr. C. Narayana Rao, Ceded Districts College, Anantapur.

Drama.—

Viprasandesamu by Kavikondala Venkata Rao, Vakil, Rajahmundry.

Uttararamacharitramu by Mallady Suryanarayana Sastri, University College, Waltair.

Grammar, Prosody and Poetics.—

1. Balavyakaranamu.
2. Praudavyakaranamu.
3. Kavijanasrayamu.
4. Sahityadarpanamu by V. Venkataraya Sastri, Chapters I to IV.

*Final.—**Poetry.—*

1. Panditaradhyacharitramu—1st Prakarana.
2. Bhimeswarapuramamu by Sreenadha, I and II Aswasas.
3. Amuktamalyada, I and II.
4. Prabhavati Pradhyumnham.
5. Soundaranandamu by P. Lakshmi Kantam, M.A., University College of Arts, Waltair.

Drama.—

Hamsavijayamu by Sreemati K. Kanakamma Garu, Queen Mary's College, Madras.

Grammar, Prosody and Poetics.—

1. Andhrasabdachintamani with Balasaraswatiyam, (Published by Messrs. Vavilla & Sons, Madras).
2. Appakaviyam, Canto III.
3. Sahityadarpanamu by V. Venkataraya Sastri, Chapters 4 to 6.
4. Chintamani Vishaya Parisodhanamu by V. Ch. Seeta-ramaswami Sastrulu, (available at Vavilla & Sons, Madras).

VIDVAN UNDER REGULATION 7-B.

*Preliminary.—**Poetry.—*

1. Bharatam, Virataparvam, Aswasam II.
2. Kumarasambhavam by Nannechodadeva, Cantos I and II (S. V. V. Press, Vizianagram).

3. Uttaraharivamsamu, by Nachana Soma, Canto II.
4. Parijatapaharanam (whole) with Parimalollasamu by N. Kuppuswamiah Garu, "Andhra Patrika" Office, Madras.
5. Nilasundariparinayamu.
6. Soundaranandamu by P. Lakshmikantam, M.A., University College of Arts, Waltair.

Prose.—

1. Kadhasaritsagaramu Part I, by V. Venkataraya Sastri, No. 4, Mallikeswarar Street, George Town, Madras.
2. Pracheenavidyapeethamulu by Dr. C. Narayana Rao, (Sadhana Book Depot, Anantapur).
3. Bharatakavitavimarsanam, Chapters 3 and 4, by K. Ramakrishnayya, O. R. Institute, University of Madras.
4. Yavanadatta by Varigonda Satyanarayana, Teacher, Board High School, Gudur, Nellore District.

Drama.—

Venisamharamu by Vaddadi Subbaraya Kavi, Rajahmundry.

Grammar, Prosody and Poetics.—

1. Balavyakaranamu.
2. Praudavyakaranamu.
3. Sahityadarpanamu, Chapters 1 to 4, by V. Venkataraya Sastri.
4. Kavyalankarachudamani (whole).
5. Laghusiddhantakaumudi—Sandhi and Samasa.

Final.—

Poetry.—

1. Bharatam, Anusasanikaparvamu, II.
2. Panditaradhyacharitramu—Parvataprakaranamu (Andhra Patrika Office, Madras).
3. Raghavapandaviyam, I and II.
4. Bhagavatamu, Dasamaskandham, Rukminikalyanam.
5. Amuktamalyada, Canto VI, 1 to 66 verses.
6. Sreerangamahatmyamu by Bhirava Kavi, I and II Aswasas. (Copies can be had of M. Ramakrishna Kavi, University of Madras).
7. Kamavilasamu by Vidvan S. V. Sastri, Nizam College, Hyderabad.

Prose.—

1. Jaimini Bharatamu by Samukhamu Venkatakrishnappa Naik, 1 to 100 pages, (Telugu Academy Office, Cocanada).

2. Panduranga Mahatmyamu by Attili Suryanarayana, Emani, Guntur Dt.
3. Nayapradeepam 1 to 30 pages with commentary by Vidvan D. V. Krishnamurti, M.A., Theosophical College, Madanapalli.
4. Asokuni Dharma Sasanamulu by Dr. C. Narayana Rao—Introduction and the Khalsi Inscriptions, (Sadhana Book Depot, Anantapur).

Drama.—

Mudrarakshasamu by P. V. Gopalam Garu, Retired Pleader, Amalapuram.

Grammar, Prosody and Poetics.—

The same as for 1939 (*vide* page 788).

History of Language and Literature.—

The same as for 1939 (*vide* page 788).

KANNADA, 1940.

The same as for 1939 (*vide* page 789).

MALAYALAM, 1940.

The same as for 1939 (*vide* page 792)

AFZAL-UL-ULAMA TITLE EXAMINATIONS, 1940.

The same as for 1939 (*vide* page 793)

AFZAL-UL-ATIBBA TITLE EXAMINATIONS, 1940.

The same as for 1939 (*vide* page 794).

MUNSHI-I-FAZIL TITLE EXAMINATIONS, 1940.

The same as for 1939 (*vide* page 795)

ADIB-I-FAZIL TITLE EXAMINATIONS, 1940.

PRELIMINARY.

(Will be prescribed later).

FINAL.

The same as for 1939 (*vide* page 797)

TABIB-I-KAMIL TITLE EXAMINATIONS, 1940.

PRELIMINARY.

(Will be prescribed later).

FINAL.

The same as for 1939 (*vide* page 799)

Title of Malpan, 1940.

Will be prescribed later.

Title of Soppar, 1940.

Will be prescribed later.

Oriental Title Examinations, 1941.

SANSKRIT, 1941.

FOR ALL GROUPS.

Preliminary and Final.—

Same as for 1940, (*Vide* page 800)

Add the following note against the “*Siddhantanidana*” prescribed for the final division of the Oriental Title Examination in Branch VII—Ayurveda—of the Siromani Course:—

N.B.—*Students are advised to consult the commentary “Kalyanavartikam” by Mr. K. G. Natesa Sastriar, Venkataramana Ayurvedic College, Mylapore to be had of Mr. K. G. Natesa Sastriyar.*

MARATHI, 1941.

**REGULATION 7-A—MARATHI AND SANSKRIT AS CO-ORDINATE
LANGUAGES.**

The same as for 1940, (*Vide* page 800).

REGULATION 7-B—MARATHI MAIN AND SANSKRIT SUBSIDIARY.

Preliminary Examination.—

Poetry.—

1. Krishnavijaya by Moropant: Chapters 60 to 65.
2. Krishnarjuna Yuddha by N. C. Kelkar.
3. Damayanti Swayamvar by A. K. Priyolker.

Prose.—

1. Sukha ani Santi: by M. H. Modak pages 247 to the end.
2. Baji Rao Peshwa by N. K. Behere.
3. Uddhar by N. S. Phadke.

Final.—

Poetry.—

1. Kekavali by Moropant.
2. Balakavichi Kavita (Thombre, T. B.).
3. Tilakachi Kavite.

Grammar, Prosody and Poetics.—

1. Mone's Grammar for Prosody and Grammar.
2. Abhinavakavya Prakash by Professor Joga.
3. Marathi Bhasha Udgama ani Vikas—Chapters 3 and 4 by K. P. Kulkarni.

History of Language and Literature.—

1. Maharashtra Saraswat by Bhawe Part I pp. 1 to 22 and 114 to 140.
 2. Bhasha Shastra ani Marathi Bhasha by K. P. Kulkarni: Chapters X and XI.
- Note.*—(All the above books can be had of Parachure Putanik and Co., Madhavbag, Bombay (4).)

ORIYA, 1941.

VIDVAN UNDER REGULATION 7-A.

Preliminary.—

The same as for 1940 (*vide* page 800) with the following changes:—

Substitute Prabandha Prakasha by Ratnakar Pati, and Kalapahada by A. Ghosh *for* Aryajeevan by Nilakantha Das, and Prakruta Pranaya Natak by R. R. Deo, respectively.

Final.—

The same as for 1940, (*Vide* page 800).

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

The same as for 1940 (*vide* page 800) with the following change:—

Substitute Tapasvini by G. Meher *for* Pranayini by Nilakantha Das.

Final.—

The same as for 1940, (*Vide* page 800).

HINDI, 1941.

VIDVAN UNDER REGULATION 7-A:

Preliminary and Final Examinations.—

The same as for 1940, (*Vide* page 800).

VIDVAN UNDER REGULATION 7-B.

Preliminary and Final Examinations.—

The same as for 1940, (*Vide* page 800).

TAMIL, 1941.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—*Poetry.*—

1. Silappadikaram: Maduraikkandam.
2. Tirukkural: Chapters 1 to 24.
3. Tevaram: Tirumurai, IV: 26 to 50 Padikangal.
4. Kambaramayanam: Ayodhyakandam—Kilaikandu Ningū Padalam.
5. Periyalvar: Tiruppallandu and the first nine Tirumozhis.
6. Tiruvarangakkalambakam.
7. Tenral vidu Thuthu, edited by Dr. V. Swaminatha Ayyar.

Prose.—

1. Madivanan: V. G. Suryanarayana Sastri.
2. Buddha Charitram: Dr. V. Swaminatha Ayyar.
3. Kalingattupparani Vacanam by T. Chelvakesavaraya Mudaliyar.

Grammar.—

1. Nannul Viruttiyurai, (Navalar Edition).
2. Agapporul Vilakkam, (Navalar Edition).
3. Yappilakkanam and Ani-ilakkanam by Visaka Perumal Iyer (Ripon Press).

Final.—*Poetry.*—

1. Nedunalvadaī.
2. Purananuru: 101—150 stanzas.
3. Silappadikaram: Kadu-Kan-Kadaī.
4. Manimekalai: 1—10 Kadaī.
5. Cintamani: Padumaiyar-ilambakam.
6. Palamozhi, 1—50 stanzas: Edited by T. Chelvakesavaraya Mudaliyar.

Grammar.—

1. Tolkappiyam, Colladikaram: Deivaccolaīyar Uraī.
2. Purapporul Venba Malai: 1—10 Padalams.
3. Yapparungalakkarikai, Pazhaīya uraī.
4. Tandiyalankaram, Pazhaīya uraī.

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Poetry.—

1. Sankaranainar Koil Antadi.
2. Tiruppathirippuliyur-k-Kalambakam.
3. Alakar Pillai-t-tamil.
4. Tirukkazhukkunra-c-Ciledai Venba 1—50.
5. Tiruvalangul-tirattu, Part II by Pamban Kumaraguru-paradasar.
6. Tiruvarur-k-Koval.
7. Madurai-c-Chokkanathar Ula.
8. Tamil Vidu Tudhu.
9. Villi Bharatam: Sabha and Udyoga Parvangal.
10. Tiruvilaiyadar Puranam: Kudar Kandan.
11. Takkayagapparani: Kalikku-k-Kuli Kuriyadu.
12. Tirukkural: Arattuppal with Parimelazhakar Ural.
13. Tanikaippuranam: Padalam 1, 2 and 5.
14. Tinaimalai Nurraimbadu.

Prose.—

1. Tolkappiyap-poruladikara-araycchi (M. Raghava Ayyan-gar).
2. Tamil-p-Perumakkal Varalaru (S. Anavaratavinayakam Pillai).
3. Meenakshi Sundaram Pillai Charitram: Part I.
4. Tiruvarutpa, Vyakhyana-p-pakuti (omitting pp. 64—201 and pp. 317—365).

Grammar.—

1. Nannul: Sankaranamaccivayar Ural.
2. Agapporul Vilakkam (Madura Tamil Sangam).
3. Purapporul Venba Malai.
4. Yapparunkalakkarikai (Pazhaiya urai).
5. Tandiyalankaram (Pazhaiya urai).
6. Vacchanandi Venba-p-Pattiyal.

Final.—

Poetry.—

1. Purananuru: 151—300.
2. Ahananuru: Mani Midai Pavalam.
3. Kalittokai: Palaikkali.
4. Kuruntokai: 1—100.
5. Pattuppattu: Malaipadukadam.

6. Padirruppattu: 7 and 8 Tens.
7. Tirukkural: Porutpal: Chs. 64—108.
8. Perunkadai: Ilavana Kadam.
9. Silappadikaram: Maduraikkadam.
10. Manimekalai: Kadai 1—10.
11. Appar Tevaram: Sixth Tirumurai, Tiruttandakappakuti.
12. Padinoram Tirumurai (Samajam edn.), Pattinattu-p-Pillaiyar.
13. Kambaramayanam, Ayodhya Kadam.
14. Kanda Puranam, Daksha Kadam: Velvippadalam to Valliyammai Tirumanappadalam.
15. Tiruvaymozhi, First Ten (with Idu).
16. Periyapuranam, Tirujnanasambandha Nayanar Puranam, first 500 stanzas.
17. Manniyal Siru Ther, by M. Kadiresam Chettiyar.

Grammar.—

1. Tolkappiyam: Eluttadikaram, Ilampuranam.
2. Tolkappiyam: Colladhikaram, Senavaraiyam and Daiva-cchaliyar.
3. Tolkappiyam: Poruladikaram, Ilampuranam.
4. Payira Virutti and Mutar-Cuttira Virutti by Sivajnana Munivar.
5. Tamil Neri Vilakkam.
6. Maran-Alankaram: Porulani Iyal.
7. Pannirupattiyal.

History of Language and Literature.—

1. Caldwell: A Comparative Grammar of the Dravidian Languages: Introduction.
2. History of the Tamil Language: V. G. Suryanarayana Sastri.
3. History of Tamil Literature: M. S. Purnalingam Pillai.
4. Tamil Varalaru, Part II: K. Srinivasa Pillai.
5. Tamil Navalar Caritai (C. C. Naidu & Sons).
6. Paranar: Madras University Publication.

VIDVAN UNDER REGULATION 7-D.

The same as for 7-B with the following additions:—

Preliminary.—

History of the Tamil Country.—

1. Karikal Colan: L. Ulaganatha Pillai.
2. Colavamsa Charitram: T. A. Gopinatha Rao.
3. Ceran Senguttuvan: M. Raghava Ayyangar.

4. Pallavas, Parts I and II: P. T. Srinivasa Ayyangar.
5. Periplus: tr. by S. Somasundara Desikar.
6. Pandiyar Varalaru: T. V. Sadasiva Pandarattar.
7. Tamilakam: Kandaiya Pillai.

Final.—

Inscriptions.—

University B.A. Selections in Tamil, Volume II, Tamil Inscriptions 1—20.

TELUGU, 1941.

VIDVAN UNDER REGULATIONS 7-A AND 7-C—PRELIMINARY.
AND FINAL.

Same as for 1940, (*vide* page 802)

VIDVAN UNDER REGULATION 7-B—PRELIMINARY AND FINAL.

Same as for 1940, (*vide* page 803)

KANNADA, 1941.

VIDVAN UNDER REGULATIONS 7-A AND 7-C.

Preliminary.—

Poetry and Prose.—

1. Gadayuddha by Ranna (The whole)—(Karnataka Kavya-Kalanidhi Series, Mysore).
2. Kadambari Sangraha (The whole)—(Mysore University Publication).
3. Panchatantra by Durgasimha, Tantra III only, pages 201—275 both inclusive.—(Karnataka Kavya Kalanidhi Office, Mysore).
4. Sankshipta Rajasekhara Vilasa by T. Chennappa (The whole)—(The Tagore Company, Bangalore City).
5. Mitravinda Govindam (The whole)—(Karnataka Kavya Kalanidhi Office, Mysore).
6. Chikkadevaraja Vamsavali (The whole)—(Karnataka Kavya Kalanidhi Office, Mysore).
7. Mudra-Manjusha (The whole)—(Wesleyan Mission Press, Mysore).
8. Vimarse, Parts I, II and III by Masti Venkatesa Iyengar, (The Viswakarnataka Book Depot, Bangalore City).

Final.—

Grammar, Prosody, Poetics, History of Literature and Literary Criticism.—

1. Sabdamanidarpana (Madras University Publication).
2. Chhandombudhi by Nagavarma (Basel Mission Book Depot, Mangalore).
3. Kaviraja Marga (Madras University Publication).
4. Apratima-Vira-Charite by Tirumalarya (Karnataka Kavya Kalanidhi Series).
5. Rasa-ratnakara by Salva (Madras University Publication).
6. Karnataka Kavi Charite, Volumes I, II and III by Rao Bahadur R. Narasimhacharya, Malleswaram, Bangalore.
7. Ranna-kavi-prasasti (omitting the last essay on "Rannana Saili") (Mysore University Union Publication, A. Venkata Rao, Progress Book Stall, Mysore).

VIDVAN UNDER REGULATION 7-B.

Preliminary.—

Poetry and Prose.—

1. Kabhigara Kavam (The whole)—(Karnataka Kavya Kalanidhi Series).
2. Jagannatha Vijaya by Rudra Bhatta, Aswasas 1 to 3 (Mysore Oriental Library Series).
3. Harischandra-Kavya Sangraha (The whole)—(Mysore University Publication).
4. Adbhuta-Ramayanam by Nandalike Lakshminaranappa (The whole)—(Karnataka Kavya Kalanidhi Office, Mysore).
5. Sakuntala Nataka by Basappa Sastri (B. Mahadeva Sastry, Kerlapur P.O., Hassan District, Mysore State).
6. Vachana-Sastra-Rahasya by R. R. Divakar, Dharwar. (Karnataka Sikshana Samiti, Dharwar).

Grammar.—

Sabdamanidarpana, (Madras University Publication).

Final.—

General Literature.—

1. Pampa Bharata, Aswasas 1 to 4 (both inclusive), (Karnataka Sahitya Parishad, Bangalore City).
2. Lilavati by Nemichandra, Aswasas 3 to 6. (both inclusive), (Karnataka Kavya Kalanidhi Office, Mysore).

3. Pushpadanta-Puranam by Gunavarma II, Aswasas 10 to 12 both inclusive, (Madras University Publication).
4. Panchatantram by Durgasimha, from the beginning to the end of Tantra I, pages 1—182, (both inclusive) (Karnataka Kavya Kalanidhi Office, Mysore).
5. Virata-parva (the whole) from Kumara Vyasa's Shatpadi Bharata, (Mysore Oriental Library Publication).
6. Ramaswamedham by Muddana Kavi (Karnataka Kavya Kalanidhi Series).
7. Veni Samhara by Pandit Jayarayacharya (Pandit J. Raghupatyacharya, c/o Mr. Y. K. Ramachandra Rao, Engineer, Vontikoppal, Mysore).
8. Bharateyara Itihasa by Narayana Sarma (Karnataka Sikshana Samiti, Dharwar).

Advanced Grammar, Prosody, Rhetoric, History of Literature and Literary Criticism.—

1. Sabdanusasana by Bhattakalanka, Revised Edition, by Rao Bahadur R. Narasimhacharya, omitting the Sanskrit Commentary. (The Curator, Government Book Depot, Bangalore).
2. Chhandombudhi by Nagavarma (Karnataka Kavya Kalanidhi office, Mysore).
3. Apratima-Vira-Charite by Tirumalarya (Karnataka Kavya Kalanidhi office, Mysore).
4. Rasaratnakara by Salva (Madras University Publication).
5. Kannada Kaipidi, Vol. I, Part III, portions relating to Poetics, (Mysore University Publication).
6. Karnataka-Kavi-Charite, Volumes I, II and III, by Rao Bahadur R. Narasimhacharya.
7. Muddana, a collection of writings on the life and works of Muddana, published by the Karnataka Sangha, Central College, Bangalore.
8. Sahityavu, Janajivanavu by D. V. Gundappa (Karnataka Book Depot, Basavangudi P. O., Bangalore City).

MALAYALAM, 1941.

(Will be prescribed later).

Afzal-ul-Ulama Title Examinations, 1941.

PRELIMINARY.

(Will be prescribed later).

FINAL.

(For 1941 and 1942).

The same as for 1940, (*vide* page 805)

Afzal-ul-Atibba Title Examinations, 1941.

PRELIMINARY.

(Will be prescribed later).

FINAL.

(For 1941 and 1942).

The same as for 1940, (*vide* page 805)

Munshi-i-Fazil Title Examinations, 1941.

PRELIMINARY.

(Will be prescribed later).

FINAL.

(For 1941 and 1942).

The same as for 1940, (*vide* page 805)

Adib-i-Fazil Title Examinations, 1941.

(Will be prescribed later).

Tabib-i-Kamil Title Examinations, 1941.

(Will be prescribed later).

Title of Malpan, 1941.

(Will be prescribed later).

Title of Soppar, 1941.

(Will be prescribed later).

APPENDIX XV.

EXAMINATION FOR CERTIFICATES OF PROFICIENCY IN
ORIENTAL LEARNING.

The following syllabuses, for the subject of the Optional division for Certificates of Proficiency in modern methods of study as applied to Oriental Learning, have been prescribed:—

I.—*Syllabus in Literary Criticism as applied to
Sanskrit Literature*1. *The fundamentals of Sanskrit Poetics—*

- (a) Standard of literary taste.
- (b) The general characteristics of literature.
- (c) Theories of style, its kinds and relation to sense—
(*Vritti, Riti, Sayya and Paka—*)
- (d) The doctrine of Rasa—

The theories of Rasa. The different classes of Rasa and their nature. The significance of the Rasa doctrine in literary criticism. The Rasa doctrine as the central theme of the Psychology and Philosophy of literary criticism.

- (e) Literary merits and blemishes.
- (f) Figures of speech—their literary value.

2. *The History of Sanskrit Poetics—*

Pre-dhvani schools. The development of the *Dhvani* school. The *anumāna* school. The development of figures of speech.

3. *The Kāvya kinds—their characteristics and development.*4. *Sravya-kavya—*

- (a) Prose—Development of prose. Kinds of prose-style, description, narration, exposition and persuasion.
- (b) Poetry—Epic-Lyric-Didactic-Satire-Elegy-Devotional poems.
- (c) Campūs.

5. *Dṛśya-kavya—*

- (a) Dramatic kinds, their characteristics and development.
- (b) Conventions of the Sanskrit drama.
- (c) Principles of dramatic construction.

6. *Sanskrit Metres—their bearing on literary criticism.*

N.B.—The following books should be studied. They are not prescribed:—

1. Bain—Rhetoric and Composition (single volume book)—Longmans.
2. Crawshaw—The Interpretation of Literature—Macmillan.
3. Hudson—An introduction to the study of literature—George G. Harrap & Co., London.
4. Hass—*Dasarūpaka*—(English translation).
5. Horowitz—Indian theatre.

The following books are recommended for consultation:—

1. Brander Mathews—A study of the drama—Longmans.
2. Butcher—Aristotle's theory of Poetry and Fine Art with text and translation of the Poetic—Macmillan.
3. Winchester—Some principles of literary criticism—Macmillan.
4. Courthope—Life in Poetry and Law in Taste.
5. Articles on *Poetry, Fine Arts and Drama* in the *Encyclopædia Britannica*.

II.—*Syllabus in Indian Philosophy in its relation to Western Philosophy*

The following books are prescribed for study:—

1. A. S. Rappoport—A Primer of Philosophy—(John Murray).
2. P. Deussen—Elements of Metaphysics—(English Trans.)
3. Max Muller—Six Systems of Philosophy.
4. A. B. Keith—Indian Logic and Atomism—Oxford University Press.
5. Deussen—The Philosophy of the Upanishads (Eng. Trans.).
6. Deussen—The system of the Vedanta.

N.B.—Candidates are expected to be familiar with the original philosophical texts in Sanskrit on which the above-mentioned works of Max Muller and Deussen are based.

III.—*Syllabus for Indo-European Philology with special reference to Sanskrit.*

N.B.—Knowledge, accurate, so far as it goes, but neither extensive nor minutely detailed, is expected under each head.

P.I.E.=Primitive Indo-European; Ind-Ir.=Indo-Iranian; Skt.=Sanskrit; Gk.=Greek; Lat.=Latin; Tcut.=Teutonic.

A. GENERAL.

1. *Elementary Phonetics*.—(a) The organs of speech—production and classification of speech-sounds. Quantity: accent sentence, word, and syllable-accent. Glides.

(b) Phonetic description of all speech-sounds treated in the course, Phonetic transcription.

(c) Sound-change; isolative, conditional; defective imitation and the result of analogy; Meaning of the term 'Law' in Linguistic Science. Dialectal separation. Growth of 'literary' languages. Families of languages. Cognate words and loan words.

2. *The Indo-European Family of Languages*.—The original speech and its earliest dialectal divisions. Branches and sub-branches of the Indo-European family. Some distinguishing characteristics of the Indo-Iranian, Hellenic, Italic, and Teutonic branches.

3. *Indo-Iranian*.—The Indian Sub-Branch. Dialects of Vedic times. Epic dialects. Classical Sanskrit. Middle Indian Speeches, New Indian Speeches.

B. PHONOLOGY.

4. *The P. I. E. vowel-system*.—The oldest conditions; primary vowels; changes resultant on accent; secondary vowels and syllabic liquids and nasals. Vowel-gradation, quantitative and qualitative; its relation to accent and its bearing on morphology. The later P.I.E. vowel-system prior to the period of language separation. General treatment of the P.I.E. vowel-system in the oldest Ind-Ir., Gk., Lat. and Teut.

5. The vowel-system of Skt. in its relation to P.I.E. and to the vowel-systems mentioned in IV. Vowel-gradation in Skt.

6. *The P.I.E. Consonant system*.—Classification of the P.I.E. consonants. Earliest dialectal variations; the 'centum' and 'satam' divisions. Treatment of the P.I.E. consonants generally in Ind-Ir., Gk., Lat. and Teut.

7. Representation of the P.I.E. consonant-system in Skt. liquids and nasals. Plosive consonants. Cerebral consonants. (Fortunatov's Law) Palatal and velar consonants. (The Law of palatalization). The law of aspirates (Grassman's Law) Spirants. Semi-vowels.

8. Sandhi, external and internal. Glides in Skt. Anaptyxis (Svarbhakti). Haplology.

C. ACCIDENCE.

9. Word-formation. Base, stem and suffix. Prefix-Infix.

10. Skt. compounds, nominal and verbal.

11. Skt. Suffixes primary (krt.) and secondary (ta'ddhita)

12. *Nominal Declension*.—P.I.E. conditions. Number. Grammatical Gender. Case and case-endings. The P.I.E. case-endings. Syncretism. Contamination. Classification of noun-declensions according to suffix. Vowels and consonant-stems.

13. *The noun declensions in Skt.* treated historically and comparatively with reference to P.I.E., Gk., Lat. and Teut. Philological explanation of all case-endings. Comparison of adjectives and formation of adverbs treated philologically.

14. *Numerals*.—Philological treatment of the Skt. numerals.

15. *Pronouns and pronominal adjectives*.—The Skt. pronouns and pronominal adjectives treated philologically with reference to P.I.E., Gk., Lat. and Teut.

16. *The Verb*.—The P.I.E. verbal-system generally treated. Voice, mood, tense, augment, reduplication, personal endings. Thematic and Athematic stems. Types of verbal action.

17. The Skt. verb in its relation to the P.I.E. verbal system. Present perfect, aorist and future systems in Skt. Transfer from the athematic to the thematic class. Periphrastic formations. Analogy in the Skt. verbal-system. Derivative verbs—causative, denominative, desiderative, intensive.

18. Voices, moods, and tenses in Skt. Infinite verbal formations.

IV.—*South Indian Languages and Literatures in their bearing on Ancient Indian History and Culture.*

(1) Candidates will be expected to show extensive study in the language of their choice whether they be Dravidian or Sanskrit.

(2) In addition, they will be expected to have studied the literature of these languages in their historical bearings.

(3) They will be further expected to have a competent knowledge of South Indian History, as in the syllabus prescribed under the heading as above, numbered (3) in APPENDIX III (Page 437).*

V.—*Syllabus for Hindu Law and Jurisprudence*

The following nine books are prescribed for study:—

Books in Sanskrit

1. Manu Smṛti with Kullukabhatta's Commentary (whole).
2. Yājñavalkya Smṛti with Mitākṣarā (whole).
3. Jimūtavāhana's Dāyabhāga (whole).

4. Vīramitrodaya—Vyavahāra only.

5. Kautilya's Arthasāstra—To be had of Curator, Government Oriental Library, Mysore.

(1) to (4) can be had of Punjab Sanskrit Book Depot, Said Mehta Bazaar, Lahore.

Books in English.

6. Mayne: Hindu Law and Usage.

7. Mayne: Ancient Law.

8. Austin: Jurisprudence.

9. K. L. Sircar: The Mīmāṃsa Rules of Interpretation (Tagore Law Lectures—Thacker Spink & Co., Calcutta).

The following three books are recommended for consultation but in no sense prescribed:—

1. Maxwell: On the Interpretation of Statutes.

2. Sidgwick: Elements of Politics.

3. Bentham: Principles of Morals and Legislation.

VI.—*Muhammadan Law and Jurisprudence.*

Muhammadan Jurisprudence by Abdur Rahim.

Digest of Anglo-Muhammadan Law by Sir R. K. Wilson.

Muhammadan Theories of Finance by Aghnides. (Longmans, Green & Co.).

Al-Qiyas Fiṣṣ Shar'īl-Islami by Ibn Qayyim.

Tarikhut Tashri-il-Islami by Al-Khuzari.

Muslim Theology, Jurisprudence, and Constitutional Theory by Macdonald.

Al-Majallah (in Hanafi Fiqh).

Kitabul Khiraj by Abu Yusuf.

Proposed Political, Social, Legal, and Judicial Reforms under Muslim Rule by Chiragh Ali. (The Punjab Publishing House, Lahore).

Syllabus for

VII.—*Literary Criticism as applied to Arabic.*

VIII.—*Arabian Philosophy in its relation to Western Philosophy, and*

IX.—*Semitic Philology.*

(i) *LITERARY CRITICISM AS APPLIED TO ARABIO.*

Criticism on Arabic poetry and prose. In poetry will be included the pre-Islamic and the Islamic poetry.

Books recommended for study:—

1. Naqdush-Shir, by Qudamah b. Jafar.
2. Muwazanah Bayna Abi Tammam wal-Buhturi, by Hasan Amidi.
3. Al-Umdah, by Ibn Rashiq.
4. Kitabul-Aghani.
5. Literary History of the Arabs, by R. A. Nicholson.
6. History of Arabic Literature, by Clement Huart.
7. Arabian Poetry, by Sir Charles Lyall.

(ii) *ARABIAN PHILOSOPHY.*

1. The Influence of Aristotle on Arabian Philosophy.
2. The Work of Syrian and Nestorian Translators under the Abbasids.
3. The Mutakallimun and the Reaction under Ghazzali.
4. Sufi-ism.

Books recommended for study:—

1. Works of al-Kindi and al-Farabi.
2. Ghazzali's Ihyau Ulumiddin and Tahafutul-Falasifah.
3. Ibn Rushd's Tahafutul-Falasifah.
4. Al-Milal wal-Nihal, by Al-Shahrastani.
5. Al-Insanul-Kamil, by al-Jili.
6. Kashful-Mahjub, by Al-Fujwiri.
7. Al-Risalatul-Qushyriyyah, by al-Qushayri.
8. Philosophy in Islam, by de Boer.
9. Arabian Thought and Its Place in History, by O'Leary.
10. Metaphysics in Persia, by Iqbal.
11. Studies in Islamic Mysticism, by Nicholson.

(iii) *SEMITIC PHILOLOGY.*

The meaning of the term Semitic. The original home of the Semitics. The dialects of the Semitic languages. Semitic writing. Semitic alphabet and the changes they undergo. Semitic vowels and consonants, and their permutations. The etymological and syntactical formations and forms in Semitic languages and the various changes and differences undergone by them. Semitic phonology. The relation of the various Semitic dialects with each other. Arabic in its relation with the non-Semitic languages.

Books recommended for study:—

- Al-Bayan wal-Tabyin, by al-Jahiz.
- Al-Mizhar, by Al-Suyuti.
- Al-Muarrab, by al-Jawaliqi.
- Shifaul-Ghalil, by Al-Khaffaji.
- Kitabul-Azdad, by al-Anbari.
- Comparative Grammar of the Semitic Languages, by W. Wright.
- Oriental and Linguistic Studies by Whitney.

Syllabuses of

- (i) *Literary Criticism as applied to Persian and* (ii) *Indo-Persian Philology*

(i) **LITERARY CRITICISM AS APPLIED TO PERSIAN POETRY AND PROSE LITERATURE.**

Only the literature in 'Modern Persian' will have to be studied.

Books recommended for study:—

1. Shirul-Ajam, by Shibli.
2. Khizana-i-Amirah, by Azad Bilgiramî.
3. Tazkiratush-Shuara, by Dawlet Shah Samargandi.
4. Atishkadah, by Lutf Ali Azar.
5. Studies in Islamic Poetry, by Nicholson.
6. Persian Portraits, by Arbuthnot.
7. Literary History of Persia, by Browne.

(ii) **INDO-PERSIAN PHILOLOGY.**

The Aryan family of the world languages with special reference to the Indo-Persian branch thereof. Origin of 'Modern Persian,' its real ancestors. The relation between Avesta and Sanskrit. The various dialects of the Iranian languages and their limits. The gradual merging of the old Avestan and Pahlavi forms and their admixture with Arabic. Persian phonology in its relation to the other Aryan and Semitic languages. The etymological and syntactical changes undergone by the Persian language comparatively as well as individually.

Books recommended for study:—

1. Sukhandan-i-Fars, by Azad.
2. Indo-Iranian Phonology, by Gray.

3. Avesta, Pahlavi and Ancient Persian Studies.
4. Avesta Grammar by Kanga. (Sanjana).
5. Discourses on Iranian Literature, by D. M. Madan.
6. Literary History of Persia, by Professor Browne.
7. The Authenticity of the Aryan Family of Languages—
Pahlavi and Huzwarsheh, by Cama.

N.B.—The above books are available at—(1) Taraporawala, Booksellers, Kalbadevi, Bombay. (2) Thacker, Spink & Co., Chowrangee, Calcutta.

X.—*Syllabuses for Dravidian Philology with special reference to the Dravidian Languages of South India.*

(i) *Syllabus for Dravidian Philology with special reference to Tamil.*

- (1) Syllabus for the Comparative Grammar of the Dravidian Languages for Gr. (v) of B.A. (*Vide* page 425).
- and (2) Syllabus for the History of the Tamil Language for Gr. (v) of B.A. (*Vide* page 427).

(ii) *Syllabus for Dravidian Philology with special reference to Telugu.*

- (1) Syllabus for the Comparative Grammar of the Dravidian Languages for Gr. (v) of B.A. (*Vide* page 425).
- and (2) Syllabus for the History of the Telugu Language for Gr. (v) of B.A. (*Vide* page 430).

(iii) *Syllabus for Dravidian Philology with special reference to Kannada.*

- (1) Syllabus for the Comparative Grammar of the Dravidian Languages for Gr. (v) of B.A. (*Vide* page 425).
- and (2) Syllabus for the History of the Kannada Language for Gr. (v) of B.A. (*Vide* page 432).

(iv) *Syllabus for Dravidian Philology with special reference to Malayalam.*

- (1) Syllabus for the Comparative Grammar of the Dravidian Languages for Gr. (v) of B.A. (*Vide* page 425).
 - and (2) Syllabus for the History of the Malayalam Language for Gr. (v) of B.A. (*Vide* page 435).
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APPENDIX XVI.

Syllabus for the Diploma Courses

(1) Modern European Languages.

FRENCH.

First Term.—The work will include the elements of grammar and pronunciation, the use of simple sentences and translation (prepared and unseen). (One of the text-books may be read).

Second Term.—Grammar (continued); more advanced translation; reading of prescribed texts; conversation.

Third Term.—Translation (a) French-English, (b) English-French; conversation and correspondence; completion of prescribed texts; free composition.

GERMAN.

Syllabus.

First Term.—The work will include the elements of grammar and pronunciation, the use of simple sentences and translation (prepared and unseen). (One of the text-books may be read).

Second Term.—Grammar (continued); more advanced translation; reading of prescribed text-books; conversation.

Third Term.—Translation (a) German-English, (b) English-German, conversation and correspondence, completion of prescribed text-books; free composition.

Text-books.

FRENCH.

1938.

Hugo: *La Chute*, edited by D. C. Heath (Heath's Modern Language Series).

A. Laurie: *Une année de collège à Paris* by Fabian Ware.

Daudet: *La vaché enragée*. (Macmillan).

1939.

E. Augier: *Le Gendre de Monsieur Poirier*.

A. Daudet: *Lettrés de mon moulin*.

A. Laurie: *Une année de Collège à Paris*.

GERMAN.

1938.

Deutsches Lesebuch: Prose pp. 1—70; Poetry Nos. 406—420.
By Heinrich Bone.

Macmillan's Progressive German Course; First and Second year, by Eug. Fasnacht.

(2) Syllabus for the Diploma Course in Geography.

(1) *The Physical Basis of Geography*, including the elements of Meteorology, Oceanography, and Geomorphology.

Meteorology.—The Atmosphere, distribution and variation of insolation, temperature, pressure, humidity, and precipitation, and the causes of this distribution and variation. Movements of the atmosphere and their causes, storms. Classification of climates.

Oceanography.—Distribution of temperature and salinity in the oceans. Movements of the water, tides.

Geomorphology.—The influence of rock-texture, tectonic movements, and volcanic activity on relief. The evolution of fluvial, glacial, aeolian and littoral topography. Theories to account for the present distribution of land and sea. Structure and development of the present land-masses.

Reading and discussion of physical and geological maps and weather charts.

(2) General Regional Geography of the World with a special study of the Regional Geography of India and any one of the three following continents:—Eurasia, North America, South America. (This continent will be prescribed from time to time).

***Regional Geography of India.*—**

Relief and Structure: Physiographic regions.

Climate: Temperature, rainfall, monsoons, climatic regions

Agriculture and land utilisation: Irrigation.

Industrial Geography.

Natural Regions.

Distribution of Population (Provinces and States).

(3) A Short Course in one of the three following:—

1. Historical and Political Geography.
2. Economic Geography.
3. Bio-Geography and Anthro-po-Geography.

SYLLABUS FOR ECONOMIC GEOGRAPHY.

1. *Scope of the subject.*—Stages of economic development.

2. *Agriculture.*—Economic and geographic aspects—methods and types—irrigation. Conditions of growth, distribution and trade in relation to the following:—cereals—pulses—sugar—fruit—spices—oil-seeds—fibres: cotton, jute, mulberry, etc. (Silk), Plantation crops; tea, coffee and rubber.

3. *Animal husbandry*.—World distribution of cattle and sheep—meat and dairy produce—wool.
 4. *Forestry*.—Temperate and tropical forests—forest products and industries—trade in forest products—conservation.
 5. *Fisheries*.—World's chief fishing grounds—inland fisheries—fish trade.
 6. *Mineral resources*.—Coal—iron—petroleum—other metals and minerals. Production, distribution and associated industries.
 7. *Industrial development*.—Manufactures—factors of localisation—power resources (coal, oil, hydro-electric power)—supply and efficiency of labour—raw materials. The following chief industries: cotton and jute—iron and steel—paper—cement, glass and leatherware—food manufactures.
 8. *Distribution of population*.—Colonisation and emigration.
 9. *Distribution and exchange*.—*Transport*: Methods and development—ocean routes—inland waterways—ports—land transport—road and rail—air transport. Markets—trade policies.
- (4) *Practical Geography*.—
- (a) Elementary Surveying: including the use of the chain, the prismatic compass, the clinometer, the aneroid barometer, the plane table and the measurements of the horizontal angle with the theodolite.
- (b) Elementary Map Projections: The more important and elementary types of the following:—
- (1) Conical projections.
 - (2) Cylindrical projections.
 - (3) Zenithal projections (centre being the pole).
 - (4) All world projections.
- (c) Interpretation of large scale topographical maps, both Indian and foreign.
- (d) Diagrammatic representation of geographic data.

Candidates will be expected to submit their practical geography note-books; and 50 marks will be allotted for it.

1938.

Second Continent for Regional Study—North America.

Text-Books—

Physical Geography: P. Lake, (Cambridge University Press).

Groundwork of Geography: A Wilmore, (G. Bell and Sons).

Mathematical Geography: Jameson and Ormsby. Volume I, (Pitman).

Intermediate Commercial Geography: L. D. Stamp, 2 Vols. (Longmans, Green & Co.).

North America: Ll. R. Jones, (Methuen).

Reference Books.—

Shorter Physical Geography: De Martonne, (Christophers).

Climate: Kendrew, (Oxford University Press).

Physical Geography: Salisbury.

Geographical Interpretation of Topographical Maps: Alice Garnett, (Harrap).

South America: Shanahan, (Methuen).

Australia: Griffith Taylor, (Oxford University Press).

Africa: Suggate, (Harrap).

An Economic and Regional Geography of Asia: L. D. Stamp, (Methuen).

Lyde's *Continent of Asia* (Macmillan & Co.).

Miss Shackleton's *Europe* (University of London Press).

Continent of Europe: L. W. Lyde, (Macmillan & Co.).

(3) Diploma Course in Indian Music.**Syllabus.*

1. Saptha swaras, twelve srutis and 3 sthayis.
2. Paras 2, 3 and 5 of the Intermediate Syllabus (*Vide* page 341).
3. Knowledge of the construction and tuning of the violin, vina, thambura and gotuvadyam.
4. Study and critical appreciation of 2 kritis each of Tyagaraja, Muttuswami Dikshitar, and Syama Sastri, and one musical composition each from any five of the 22 composers mentioned in para 8 of the B.A. Syllabus (*Vide* page 445).
5. Ability to write down correctly in the *sa ri ga ma* notation any one of the songs learnt.

There shall be one theory paper of two hours duration carrying 60 marks and a Practical examination carrying 90 marks.

A separate minimum of 30 per cent. will be required in the practical examination.

The practical examination shall be either in vocal music or instrumental music. Instrumental music candidates shall have the option of playing the vina, violin, flute or gotuvadyam at the practical examination.

At the Practical Examination candidates will be expected to sing or play any of the 15 ragas prescribed as well as compositions in them in any of the following talas:—Adi, Roopaka, Tripata, Chapu and Jhampa.

The following books are recommended as reference books.—

1. Guruguha Ganamrta Varshini by Vedanta Bhagavatar.
2. Kirtana Sagaram, Part II, by P. Sambamurti.

Syllabus for the two year Diploma Course in Indian Music.†

Theory.—

1. Acoustics: Production and transmission of sounds, vibration of strings; sympathetic vibration; upper partials; pitch intensity and timbre; Resonance; echoes; acoustics of music halls.

*This syllabus ceases to be in force with effect from the academic year 1937-38.

†This syllabus will take effect from the academic year 1937-38.

828 SYLLABUS FOR THE DIPLOMA COURSE IN [APP. INDIAN MUSIC.

Larynx and ear: Svaras, svarasthanas and srutis; vadi, samvadi, anuvadi and vivadi; Sthayi, Nada; theory of twenty-two srutis and views thereon.

2. Grama, Murchana and jati. History and development of scales; Melody and Harmony.

3. Raga and Ragalakshana in general; definition and classification of ragas; the study of thirteen lakshanas; Raga alapana paddhati.

Gamakas and Alankaras.

4. Tala system; Seven talas; thirty-five talas; Anga, Aksharakala, matra. The study of the ten pranas. The Chapu tala.

5. Musical forms or compositional types and their lakshanas. Gita, Varna, Kirtana, Pada, Ragamalika; Prabandha, thaya and suladi; Sabda, jatisvara, svarajati and tillana; folk songs.

Musical diction and rules of composition.

6. Principles of South Indian Notation.

7. Musical instruments and their classification; special study of the Vina, Tambura, Violin, Gotuvadya, Flute, Nagasvara and Mrdanga.

8. History and development of South Indian Music; Study of the main literature including the relevant portions of the works of Bharata, Sarangadeva, Matanga, Narada, Ahobila, Ramamatya, Somanatha, Govinda Dikshita, Venkatamakhin, Tolajaji and Govindacharya.

9. Study of the Styles and characteristics of the compositions of Jayadeva, Purandaradas, Tirtha Narayana, Bhadrachalam Ramadas, Kshetragna, Sarangapani, Arunachala Kavi, Pallavi Dorasami Iyer, Tyagaraja, Muthuswami Dikshita, Syama Sastri, Paidala Gurumurti Sastri, Adippayya, Pallavi Gopala Iyer, Anayya, Ghanam Krishna Iyer, Gopala Krishna Bharati, Valdesvaran Coll Subbarama Iyer, Sadasiva Brahmendra, Karur Dakshinamurti Sastri, Kavi Kunjara Bharati, Subbaraya Sastri, Sadasiva Rao, Svati Tirunal, Pallavi Sesha Iyer, Patnam Subrahmanya Iyer, Vina Kuppler and Ramnad Srinivasa Iyengar.

Short biographical sketches of the writers and composers mentioned in paragraphs 8 and 9.

10. Contemporary music.

Practical.—

1. In addition to preliminary exercises and chittatanas the following:—

12 Gitas including two lakshana gitas,

8 Varnas including three in Ata tala,

- 32 Kirtanas,
- 2 Astapadis,
- 2 Tarangas,
- 4 Padas,
- 1 Padavarna,
- 2 Ragamalikas,

The compositions shall be representative of at least one each of the composers mentioned in paragraph 9 (Theory) and of the ragas enumerated in paragraph 2 below.

2. (a) Todī, Mayamalavagaula, Bhairavi, Kambhoji, Sankarabharana and Kalyani.

(b) Anandabhairavi, Kedaragaula, Sahana, Athana, Surati, Begada, Madhyamavati, Mohana, Saveri, Dhanyasi, Mukhari, Bilahari, Vasanta, Kanada, Yadukula Kambhoji, Kharaharapriya, Nadanamakriya, Saurashtra, Khamas, Purva Kalyani and Saranga.

(c) Arabhi, Nata, Gaula, Sri, Subhapantuvārālī, Asaveri, Gaulipantu, Chakravaka, Ritigaula, Darbar, Nata Kuranji, Kedara, Nilambari, Suddhasaveri, Hamsadhvani, Sriranjani, Punnagavarali, Huseni, Harikambhoji and Devagandhari.

Lakshanas and sancharas of the ragas in groups (a), (b) and (c) above.

Alapana of the ragas mentioned in groups (a) and (b) above.

3. Svara improvisation in Adi, Rupaka, Triputa, Chapu and Jhampa talas in the compositions of the ragas of group (a) and any ten of the ragas in group (b) in paragraph 2.

In the practical examination the candidates may offer Vocal music, Vina, Violin, Gotuvadya or Flute.

Candidates shall sing or play to the sruti of a tambura.

Candidates shall tune the tambura.

Candidates offering instrumental music shall not be called upon to sing.

Books for Reference.—

1. Bharatanatya Sastra, Matanga's Brhaddesi, Narada Siksha, Sarangadeva's Sangitaratnakara, Ahobila's Sangita Parijata, Ramamatya's Svaramelakalanidhi, Somanatha's Ragavibodha, Govinda Dikshita's Sangita

Sudha, Venkatamakhin's Chaturdandiprakasika, Tola-
jaji's Sangitasaramrta, Govindacharya's Sangraha
Chudamani.

2. Sangitasampradayapradarsini, Singaracharlu's works,
Pallavisvarakalpavalli of Tiruvattur Tyaga Iyer,
A. Panditar's Karunamrta sagaram, Ganabhaskara of
K. V. Srinivasa Iyengar, Thala and pallavi portions
of Sangitakaumudi of Tiruvayyar Subrahmanya Iyer,
Pallavi Parijata of Vedanta Bhagavata, Ganavidya-
prakasini by Perungulam Srinivasa Iyengar, Sankirtana
Ratnavali by Tiruvattur Tyaga Iyer.
3. Helmholtz's Sensations of Tone, Sound by Richardson,
Acoustics of Auditoria by Davis and Kaye, Music of
Hindustan by Fox Strangways, Musical instruments in
Indian Museum, Calcutta by Dr. Meerwarth, Madras
Museum Bulletin on South Indian Musical Instruments
by P. Sambamurti, Syama Sastri and other composers
by P. Sambamurti, Melakarta and Janyaraga scheme
by P. Sambamurti, Tyagaraja by M. S. Ramaswami
Iyer, The journal of the Music Academy, Madras.

APPENDIX XVII.

MATRICULATION EXAMINATION.

I hereby certify that.....has kept attendance for not less than 120 days of the previous school year before 10th March in.....School.....that he has completed the course of study prescribed for the several classes of a high school and that his progress and conduct have been satisfactory.

Dated.....19 .

Headmaster.

CERTIFICATES OF ATTENDANCE.

INTERMEDIATE EXAMINATION IN ARTS & SCIENCE.

(a) I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,.....in the course of instruction followed by them during the two years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the Intermediate Examination in Arts and Science.

(b) I further certify that they have undergone a course of Physical Training prescribed or recognized by the College and have kept three-fourths of the attendances.

Dated.....19 .

Principal.

We certify that the candidates with asterisks against their names have satisfactorily completed the course of practical instruction in their respective subjects.

<i>Professor or Lecturer in Mathematics</i>		
<i>Do.</i>	<i>do.</i>	<i>Physics</i>
<i>Do.</i>	<i>do.</i>	<i>Chemistry</i>
<i>Do.</i>	<i>do.</i>	<i>Natural Science</i>
<i>Do.</i>	<i>do.</i>	<i>Engineering</i>
<i>Do.</i>	<i>do.</i>	<i>Geography</i>
<i>Do.</i>	<i>do.</i>	<i>Indian Music</i>

Principal.

No.	Name of candidate.	Second Language.
1	<i>Mathematics, Physics, Chemistry.</i>	
2	.....	Tamil,
3	.....	Telugu.
	.....	Kannada.
1	<i>Natural Science, Physics, Chemistry.</i>	
2	.....	...
3	.....	...
4	.....	..

B.A. DEGREE EXAMINATION.

I certify that the following candidates have kept three-fourth of the attendances prescribed by the.....College,in the course of instruction in Part I (English Language and Literature), Part II (A Second Language) and Part III (one of the optional groups) during the two years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the B.A. Degree Examination.

Dated.....19 .

Principal.

We certify that the candidates with asterisks against their names have attended the course of practical instruction in their respective subjects for the B.A. Degree Examination during the two years and that they have satisfactorily completed the course.

Professor or Lecturer in Mathematics.....

<i>Do.</i>	<i>do.</i>	<i>Physics</i>
<i>Do.</i>	<i>do.</i>	<i>Chemistry</i>
<i>Do.</i>	<i>do.</i>	<i>Botany</i>
<i>Do.</i>	<i>do.</i>	<i>Zoology</i>
<i>Do.</i>	<i>do.</i>	<i>Geology</i>
<i>Do.</i>	<i>do.</i>	<i>Mechanical Engineering</i>
<i>Do.</i>	<i>do.</i>	<i>Electrical Engineering</i>
<i>Do.</i>	<i>do.</i>	<i>Indian Music.</i>

Principal.

No.	Name of candidate.	Second Language.	Subsidiary subject.
<i>Group (i.a).</i>			
1	Tamil.	...
2	Telugu.	..
3	Malayalam.	...
<i>Group (ii.a).</i>			
1	Tamil.	Physics.
2	Telugu.	Chemistry
3	Kannada.	Botany,

B.A.
B.Sc. (HONOURS) DEGREE EXAMINATION.

PRELIMINARY
PART I EXAMINATION.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,in the course of instruction in English during one year, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the Preliminary Part I Examination for the B.A. B.Sc. (Honours) Degree.

Dated.....19 .

Principal.

No.	Name of candidate.
1
2
3
4

B.A. (HONOURS) DEGREE EXAMINATION.

FINAL EXAMINATION.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,in the course of instruction followed by them during the three years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the B.A. (Honours) Degree Examination.

Dated.....19 .

Principal.

No.	Name of candidate.
BRANCH I—MATHEMATICS.	
1
2
3

B.Sc. DEGREE EXAMINATION.

PART I.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....Collegein the course of instruction in languages during one year, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the examination in Part I for the B.Sc. Degree.

Dated.....19 .

Principal.

No.	Name of candidate.	Language.
1
2
3
4

B.Sc.
B.Sc. (HONS.) DEGREE EXAMINATION.

PART II.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,in the course of instruction followed by them during the ^{two}~~three~~ years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the ^{B.Sc.}~~B.Sc. (Honours)~~ Degree.

Dated.....19 .

Principal.

We certify that the candidates with asterisks against their names have attended the course of practical instruction in their respective subjects for the ^{B.Sc.}~~B.Sc. (Honours)~~ Degree Examination during the ^{two}~~three~~ years and that they have satisfactorily completed the course.

Professor or Lecturer in Mathematics.....

Do. do. Physics

Do. do. Chemistry

Do. do. Botany

Do. do. Zoology

Do. do. Geology

Do. do. Mechanical Engineering

Do. do. Electrical Engineering

No.	Name of candidate.	Main subject.	Subsidiary subject.
1	Mathematics.	Physics and Chemistry.
2	Physics ...	Chemistry & Botany.
3	Chemistry ...	Physics and Botany.

F.L. EXAMINATION.
B.L. DEGREE

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,in the course of instruction in Law during the year, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for

F.L.
the B.L. Degree Examination.

Dated.....19 ..

Principal.

No.	Name of candidate.
1
2
3
4

ORIENTAL TITLE EXAMINATION.

PRELIMINARY
FINAL
CERTIFICATE OF
PROFICIENCY

}

EXAMINATION.

I certify that the following candidates have kept three-fourth of the attendances prescribed by the.....College,in the course of instruction followed by them during the two years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the examination.

Dated.....19 .

Principal.

No.	Name of candidate.
SIBOMANI—BRANCH I.	
1
2
3
VIDVAN—REGULATION 7-A.	
1
2
3
CERTIFICATE OF PROFICIENCY.	
1
2
3

B.O.L. DEGREE EXAMINATION.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,..... in the course of instruction in Part I (English), Part II (Selected Branch or Group in the Final Division of the examination for Oriental Titles) and Part III (two of the subjects prescribed for Certificate of Proficiency) during the three years, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the B.O.L. Degree Examination.

Principal,

Dated.....19 .

TABULAR FORM.

PART I.

No.	Name of candidate.
1
2
3

PART II.

No.	Name of candidate.	Selected Group or Branch.
1
2
3

PART III.

No.	Name of candidate.	Selected subject.
1
2
3

EXAMINATION FOR THE DIPLOMA IN CERTIFICATE { ECONOMICS.
EUROPEAN LANGUAGES.
GEOGRAPHY.
INDIAN MUSIC.
LIBRARIANSHIP.

I certify that the following candidates have attended during the two years the year three-fourths of the course of lectures and classes arranged for the benefit of candidates for the Diploma, Certificate, that they have under my supervision systematically followed the course of study prescribed and that their conduct and progress have been satisfactory.

Dated.....19 ..

Professor or Lecturer.

No.	Name of candidate.
1
2
3
4

F. E.
B. E. DEGREE
L. T. DEGREE.
B.Sc. (Ag.) DEGREE. } EXAMINATION.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,in the course of instruction and practical training in Engineering|Teaching|Agriculture during the two years|four years|year|years that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the F.E.|B.E. Degree|L.T. Degree|B.Sc. (Ag.) Degree|Examination.

Dated.....19 ..

Principal.

No.	Name of candidate.
1
2
3

ATTENDANCE CERTIFICATE.

B.V.Sc. DEGREE EXAMINATION.

I certify that the following candidates have kept three-fourths of the attendances prescribed by the.....College,..... in the course of instruction and practical training in Veterinary Science, during the year, that their conduct and progress have been satisfactory and that they have completed the course of study prescribed for the B.V.Sc. Degree

Preliminary

Examination Intermediate.

Final

Principal,

Dated.....19 .

Madras Veterinary College.

PRE-REGISTRATION EXAMINATION.

I certify that.....has undergone the prescribed course of study extending over a period of six months, subsequent to his passing the Intermediate Examination, and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19 .

Principal, Medical College.

I certify that.....has attended a course of lectures on Inorganic Chemistry and a course of instruction in Practical Chemistry.

(Signature)

Dated.....19 .

Professor of Chemistry.

I certify that.....has attended a course of Experimental Physics, including Practical Physics.

(Signature)

Dated.....19 .

Professor of Physics.

I certify that.....has attended a course of Biology, Theoretical and Practical.

(Signature)

Dated.....19

Professor of Biology

FIRST M.B. & B.S. EXAMINATION.

PART I.

I certify that to the best of my knowledge and belief..... completed the age of seventeen years on or before the date of admission to the Medical College.....that he has been engaged in Medical studies at the Medical College.....for not less than one academic year subsequent to his passing the Pre-Registration Examination, and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19

Principal, Medical College.

I certify that... is attended a course of lectures on Organic Chemistry, and a course of instruction in Practical Organic Chemistry.

(Signature)

Dated.....19

Professor of Chemistry.

PART II.

I certify that.....has been engaged in Medical studies at the Medical College,.....for not less than two academic years subsequent to his passing the Pre-Registration Examination and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19

Principal, Medical College.

I certify that.....has attended a course of instruction in Anatomy including Elements of Human Embryology, Theoretical and Practical.

(Signature)

Dated.....19

Professor of Anatomy.

I certify that.....has dissected for twelve months during the regular sessions and has completed the dissections of the human body.

(Signature)

Dated.....19

Professor of Anatomy.

I certify that.....attended a course of lectures on Physiology and a course of instruction in Practical Physiology including Histology.

(Signature)

Dated.....19

Professor of Physiology.

I certify that.....has attended a course of lectures on Biochemistry and a course of instruction in Practical Chemical Physiology and Biochemistry.

(Signature)

Dated.....19 .

Professor of Biochemistry.

SECOND M.B. & B.S. EXAMINATION.

PART I.

I certify that.....has been engaged in Medical studies at the Medical College,.....for not less than one academic year subsequent to his passing the First M.B. & B.S. Examination, and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19 .

Principal, Medical College.

I certify that.....has attended a course of lectures on Pharmacology and a course of instruction in Practical Pharmacy.

(Signature)

Dated.....19

Professor of Pharmacology.

PART II.

I certify that.....has been engaged in Medical studies at the Medical College,.....for not less than one academic year for Hygiene and Ophthalmology and two academic years for General Pathology with Bacteriology subsequent to his passing the First M.B. & B.S. Examination and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19

Principal, Medical College.

I certify that.....has attended a course of lectures on Hygiene and a course of instruction in Practical Hygiene.

(Signature)

Dated.....19

Professor of Hygiene.

I certify that.....has attended a course of lectures on General Pathology and a course of instruction in Practical Pathology.

(Signature)

Dated.....19

Professor of Pathology.

I certify that.....has been engaged in Post-mortem-room-clerking for a period of three months.

(Signature)

Dated.....19

Professor of Pathology.

I certify that.....has attended a course of lectures on Bacteriology and a course of instruction in Practical Bacteriology.

(Signature)

Dated.....19

Professor of Bacteriology.

I certify that.....has attended (1) a course of instruction in Ophthalmology extending over a period of two terms and (2) an Ophthalmic hospital or the Ophthalmic wards of a General Hospital on three days in the week for a period of three months.

Dated.....19

(Signature)

Professor of Ophthalmology.

FINAL M.B. & B.S. DEGREE EXAMINATION.

PART I.

I certify that.....has been engaged in Medical studies at the Medical College.....for not less than one academic year subsequent to his passing the First M.B. & B.S. Examination and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19 .

Principal, Medical College.

I certify that.....has attended a course of instruction in Forensic Medicine including demonstrations for a period of two terms.

(Signature)

Dated.....19 .

Professor of Forensic Medicine.

PART II.

I certify that.....has been engaged in Medical studies at the Medical College.....for not less than three academic years subsequent to his passing the First M.B. & B.S. Examination and that his progress and conduct have been satisfactory.

(Signature)

Dated.....19 .

Principal, Medical College.

I certify that.....has attended a course of instruction in Medicine including Therapeutics.

(Signature)

Dated.....19 .

Professor of Medicine.

I certify that.....has been engaged as Clinical clerk in the Medical Wards of a recognised hospital for a period of nine months.

Dated.....19 .

(Signature)

Physician.

.....Hospital.

I certify that..... has been engaged as clinical clerk in the Medical Out-patients Department of a recognized hospital for a period of three months.

(Signature)

Dated.....

Medical Officer,

.....Hospital.

I certify that.....has attended a recognised course of instruction in Infectious Diseases.

(Signature)

Dated.....19 .

Professor of Medicine.

I certify thathas attended as clinical clerk in a recognized hospital for Infectious Diseases in two days in the week for a period of three months.

Dated.....19 .

(Signature)

Medical Officer,

Hospital for Infectious Diseases.

I certify that.....has attended a recognized course of instruction in Mental Diseases.

(Signature)

Dated.....19 .

Professor of Mental Diseases.

I certify that.....has attended as clinical clerk in a recognized Mental Hospital on one day in the week for a period of three months.

(Signature)

Dated.....19 .

Superintendent,

Hospital for Mental Diseases.

I certify that.....has attended a recognized course of instruction in Tuberculosis.

Dated.....19 .

(Signature)

Professor of Medicine.

I certify that.....has attended as clinical clerk in a Tuberculosis Hospital on one day in the week for a period of three months.

(Signature)

Dated.....19 .

Medical Officer,

Tuberculosis Hospital.

I certify that.....has attended a recognized course of instruction in Dermatology.

(Signature)

Dated.....19 .

Professor.

I certify that.....has attended the special department relating to skin diseases on two days in the week for a period of three months.

(Signature)

Dated.....19 .

Medical Officer,
.....Hospital.

I certify that.....has attended a recognised course of instruction in Vaccination by a qualified Health Officer.

(Signature)

Dated.....19 .

Health Officer.

I certify that.....has attended a recognised course of instruction in Children's Diseases.

(Signature)

Dated.....19 .

Professor.

I certify that.....has attended a course of instruction in Surgery.

(Signature)

Dated.....19 .

Professor of Surgery.

I certify that.....has been engaged as surgical dresser in the surgical wards of a recognised hospital for a period of nine months.

(Signature)

Dated.....19 .

Surgeon,
.....Hospital.

I certify that.....has been engaged as surgical dresser in the Out-Patients Department of a recognised hospital for a period of three months.

Dated.....19 .

Surgeon,
.....Hospital.

I certify that.....has attended (1) a recognised course of instruction in Oto-Rhine-Laryngology and (2) a recognised clinic as clinical clerk on three days in the week for a period of three months.

Dated.....19 .

(Signature)

Professor.

I certify that.....has attended a recognised course of instruction in Orthopedics on two days in the week for a period of three months.

Dated.....19 .

(Signature)

Professor.

I certify that.....has attended a practical instruction in the administration of anaesthetics and has personally administered a general anaesthetic in at least six cases.

Dated.....19 .

(Signature)

Surgeon-in-Charge.

I certify that.....has attended a recognized course of instruction in Operative Surgery.

Dated.....19 .

(Signature.)

Professor of Operative Surgery.

I certify that.....has attended (1) a recognized course of instruction in Radiology and (2) an X-Ray Institute on three days in the week for a period of one month.

Dated.....19 .

(Signature)

Radiologist.

I certify that.....has attended (1) a recognized course of instruction in Venereal diseases and (2) a Venereal clinic for two days in the week for a period of three months.

Dated.....19 .

(Signature)

Professor.

I certify that before commencing the study of Practical Midwifery.....has attended a course of lectures on Medicine, Surgery, and Midwifery and diseases to women and new born child.

Dated.....19 .

(Signature)

Professor of Obstetrics and Gynaecology.

I certify that.....has been engaged as clinical clerk at an antenatal clinic and the Maternity wards of a lying-in-hospital for a period of three months, that he has conducted twenty cases of labour under my supervision (of which not less than five cases were conducted in my presence) and that under my supervision he attended the cases during the puerperal period.

Dated.....19 .

(Signature)

Member of the Staff of a Lying-in-Hospital or of a Maternity Charity recognized by the University of Madras.

I certify that.....has been engaged as clinical clerk in the Gynaecologic wards and Out-patient Department of a recognized hospital for a period of three months.

Dated.....19 .

(Signature)

Medical Officer.

.....Hospital.

ADDITIONAL CERTIFICATE AFTER ONE TERM'S STUDY.

*I certify that.....has been re-engaged in the prescribed course of studies for the.....Examination for a period of one term subsequent to his appearance at that examination in *.....when he was referred to his studies by the Examiners and that his progress and conduct have been satisfactory.*

(Signature)

Dated.....

Principal, Medical College.

DIPLOMA IN MIDWIFERY.

I certify that.....has served as a House Surgeon in... ..for a period of six months, and that ^{he}_{she} has personally conducted not less than six Obstetric operations during that period.

Dated.....19 .

(Signature)

Superintendent,

.....Hospital.

I certify that.....has attended a course of lectures and clinical demonstrations on Midwifery and Gynaecology for a period of six months.

Dated.....19 .

(Signature)

Superintendent,

Government Hospital for Women and Children,

Madras.

Additional Certificate of Attendance.

I certify that.....has attended a course of lectures and clinical demonstrations on Midwifery and Gynaecology for a period of three months.

Dated.....19 .

(Signature)

Superintendent,

Government Hospital for Women and Children,

Madras.

B.S.Sc. DEGREE EXAMINATION.

FOR THE EXAMINATION IN PART I.

*I certify that, subsequent to his having obtained a registrable medical qualification recognised by the University Mr.....
.....has regularly attended the courses of instruction in the*

*The date of the examination must be entered here.

subjects shown below and that he has performed the work thereof in a satisfactory manner:

- (i) *Chemistry and Physics in relation to Public Health, including Laboratory work (180 hours).*
- (ii) *Bacteriology, including laboratory work (220 hours).*
- (iii) *Medical Entomology and Parasitology, including laboratory work, and entomological surveys (90 hours).*
- (iv) *Climatology and Meteorology (10 hours).*

.....

.....
*Professor of Hygiene, Medical
 College.*

MADRAS,
Countersigned.

.....

Principal, Medical College, Madras.

PART II.

*I certify that, subsequent to his having obtained a registrable medical qualification recognised by the University Mr.....
has regularly attended the courses of instruction in the subjects shown below, that he has performed the work thereof in a satisfactory manner, that he has passed the Examination in Part I for the B.S.Sc. Degree, and that two years have elapsed since he obtained a registrable medical qualification recognised by the University:—*

- (i) *Principle of Public Health (50 hours).*
- (ii) *Epidemiology and Vital Statistics (20 hours).*
- (iii) *Sanitary Law and Administration (20 hours).*
- (iv) *Sanitary Construction and Planning (30 hours).*
- (v) *Vaccination (30 hours).*
- (vi) *Tuberculosis (30 hours).*
- (vii) *Venereal Diseases (10 hours).*
- (viii) *Attendance on the practice of a Hospital for Infectious Diseases (60 hours).*
- (ix) *Instruction in Public Health Administration under the Medical Officer of Health of the City of Madras (180 hours).*

.....

.....
*Professor of Hygiene, Medical
 College.*

MADRAS,
Countersigned.

.....

Principal, Medical College, Madras.

APPENDIX XVIII.

Regulations relating to Courses of Studies in Arabic, Persian and Urdu for the Oriental Titles Examinations which will be in force for the Examinations of 1937 and 1938:

Afzal-ul-Ulama-course of studies for

8. The following shall be the course of studies in Arabic for the title *Afzal-ul-Ulama*:—

A. PRELIMINARY.

The courses of study shall consist of—

- I. Tafsir and Hadith.
- II. Fiqh, 'Aqaid and Mantiq.'
- III. Prose Text-books.
- IV. Poetry Text-books.
- V. History.
- VI. Translation from Arabic into Urdu and from Urdu into Arabic.

B. FINAL.

The courses of study shall consist of—

- I. Tafsir and Hadith and Ilmul Hadith.
- II. Fiqh, Usulul Fiqh.
- III. Prose Text-books.
- IV. Poetry Text-books.
- V. History.
- VI. Translation from Arabic into Urdu and from Urdu into Arabic.
- VII. Mantiq and Balaghat.
- VIII. Composition.

Candidates for the Examination in *Afzal-ul-ulama* Title whose mother tongue is one of the Dravidian Languages shall be exempted from examination in the paper on Translation from Arabic into Urdu or *vice versa*, but shall be required to take in its stead a paper on an additional Text book in Arabic to be prescribed from time to time,

850 COURSES OF STUDIES IN ARABIC, PERSIAN [APP.
AND URDU FOR THE ORIENTAL TITLES
EXAMINATIONS.

Munshi-i-Fazil-
course of studies
for

9. The following shall be the courses
of studies for the title *Munshi-i-Fazil*—

A. PRELIMINARY.

The courses of study shall consist of Persian as the main language and Urdu as a subsidiary language, together with a text-book in Arabic.

Persian as the main subject will include—

- I. Persian Prose.
- II. Persian Poetry.
- III. Translation from Persian into Urdu and *vice versa*.
- IV. Composition in Persian.

Urdu as the subsidiary subject will include—

- I. Urdu Prose.
- II. Urdu Poetry.

Questions on Grammar may be put in the examination papers on the Text-books.

B. FINAL.

The courses of study shall consist of Persian as the main language and Urdu as a subsidiary language, together with a text-book in Arabic.

Persian as the main subject will consist of—

- I. Persian Prose.
- II. Persian Poetry.
- III. Translation from Persian into Urdu and *vice versa*.
- IV. History of Persian language and literature.
- V. Composition in Persian.

Urdu as the subsidiary subject will consist of—

- I. Urdu Prose.
- II. Urdu Poetry.

Questions on Grammar may be put in the examination paper on the Text-books.

APPENDIX XIX.

Rules for award of Prizes for the encouragement of publication of works on modern subjects in Dravidian Languages.

(1) The object of the prize shall be to encourage the production of prose literature in the four South Indian Languages on the modern subjects.

(2) The subjects in languages in which the award is to be made in a year shall be announced not less than two years in advance of the date of award. The choice of subjects shall be made by the Syndicate after consulting the Boards of Studies concerned.

(3) Only complete works, preferably typed or printed, and in the case of manuscripts written on one side of the paper only and free from over writings, etc., shall be taken into consideration. *Works by joint authors (say a scientist and a specialist in a language) will be accepted for the prizes.*

(4) The award shall be made by the Syndicate on the advice of *ad hoc* Committees of not less than three and not more than five persons to be appointed for each language, provided that the Chairman of the Board of Studies in the language concerned shall be one of the persons so appointed.

(5) Works should be preferably typed or printed and six copies sent except in the case of written manuscripts where one copy written on one side of the paper and free from over-writings, etc., should be submitted. The works so submitted for consideration shall be sent so as to reach the Registrar three clear months before the date of award.

(6) The prize shall be awarded ordinarily to persons who are Indians or are domiciled in the areas within the jurisdiction of the University.

(7) The amount of the award to be made in a year shall in no case exceed Rs. 1,000 in any one language. The prize amount shall be paid only after the publication

of the work by the competitor. If the work is entrusted to the University for publication, only the balance of the amount, after deducting the cost of the publication of the work shall be paid.

(8) The Competitor shall certify that the work has not previously formed the basis for the award of any prize or title.

(9) The Syndicate may divide the prize among works of equal merit or decline to award the prize on the ground that none of the works submitted reaches the proper standard of merit.

APPENDIX XX.

Time-tables for Examinations.

The order of time and subjects in which the several examinations shall be conducted shall be as set forth in the following tables and the number of marks assignable to each subject shall be as therein specified:—

Time-tables and subjects for examinations.

Provided always

- (1) that, in the event of no candidate appearing for any paper in the B.A. (Honours) Degree Examination, the time-tables for that examination may be altered by the Syndicate, but the order of the papers shall, so far as possible, be maintained;
- (2) that, in the case of Part III of the B.A. Examination held in April and Part II of the B.Sc. Examination, the first day of the examination in each of the optional groups or branches shall be determined annually by the Syndicate and shall be notified in the *Gazette* in the month of February;
- (3) that, unless otherwise determined by the Syndicate the Practical, Clinical and Oral Examinations shall follow the Written Examinations.
- (4) that the time-table for the Vidvan Examination as may be annually determined by the Syndicate shall be duly notified in the *Gazette* in the preceding February.
- (5) Dates and hours of Practical, Clinical, Oral and *Viva Voce* Examinations shall be notified to the candidates before the Written Examination is over.

MATRICULATION EXAMINATION

Days	Hours	Subjects	Marks
First day ...	10—1	English—1st paper	100
Second day...	10—1	English—2nd paper	100
Third day ...	10—1	Second Language	100
Fourth day...	10—1	Arithmetic and Algebra	100
Fifth day ...	10—1	Geometry	100
Sixth day ...	10—1	Elementary Science	100
Seventh day.	10—1	History	100
Eighth day ...	10—1	Geography	100

INTERMEDIATE EXAMINATION IN ARTS AND SCIENCE

PART I—ENGLISH.

Days	Hours	Subjects	Marks
First day ...	10—1	Shakespeare and Poetry	100
Second day...	10—1	Prose	100
Third day ...	10—1	Composition	100

PART II—A SECOND LANGUAGE.

Days	Hours	Subjects	Marks
Fourth day.	10—1	Text-books, Grammar, etc., for Sanskrit, Arabic, Persian and Hebrew ...	100
	10—1	Text-books, Grammar, etc., for other languages	100
Fifth day ...	10—1	Composition and Translation for Indian languages and Translation in other Languages viz. Greek, Latin, French and German. ...	100
	10—1	Translation for Sanskrit, Arabic, Persian and Hebrew ...	100

PART III—GROUP A.

Days	Hours	Subjects	Marks
Sixth day ...	10—12	Mathematics—First paper	75
	2—4	Do. Second paper... ..	75
Seventh day.	10—12	Natural Science—First paper	75
	2—4	Do. Second paper	75
Eighth day.	10—12	Physics—First paper	75
	2—4	Do. Second paper	75
Ninth day ...	10—12	Chemistry—First paper	75
	2—4	Do. Second paper	75
Tenth day ...	10—12	Geography—First paper	75
	2—4	Do. Second paper	75

GROUP B.

Days	Hours	Subjects	Marks
Eleventh day.	10-12-30	Ancient History I—History of Greece ..	75
	2-4-30	Do. II—History of Rome ...	75
Twelfth day.	10-12-30	Modern History I—(History of Great Britain and Ireland—Political and Economic) ...	75
	2-4-30	Modern History II—do. ...	75
Thirteenth day.	10-12-30	Indian History—First paper ...	75
	2-4-30	Do. Second paper ...	75
Fourteenth day.	10-12	Logic—First paper ...	75
	2-4	Do. Second paper ...	75
Fourth day...	10-1	Text-books, Grammar, etc., for Sanskrit, Arabic, Persian and Hebrew ...	75
	10-1	Text-books, Grammar, etc., for other languages ...	75
Fifth day ...	10-1	Composition and Translation for Indian languages and Translation for Greek, Latin, French and German ...	75
	10-1	Composition and Translation for Sanskrit, Arabic, Persian and Hebrew ...	75

GROUP C.

Days	Hours	Subjects	Marks
Fifteenth day.	10—12	Agriculture (Written)	75
	3 Hours	Do. (Practical and Oral) ...	75
Sixteenth day. {	10—12	Electrical Engineering—First paper ...	75
	2—4	Do. Second paper	75
Seventeenth day. {	10—12	Mechanical Engineering—First paper.	75
	2—4	Do. Second paper	75
Eighteenth day.	10—12	Surveying—First paper (Written) ...	75
	2 Hours	Do. (Practical) ...	75
Nineteenth day.	10—12	Architecture—First paper ...	75
	2—4	Do. Second paper ...	75
Twentieth day.	10—12	Drawing—Written	75
	2—4	Do. Practical	75
Twenty-first day.	10—1	Indian Music—Theory ...	75
	10—1	Western Music—do. ...	75
Time and Date will be specified later.		Indian Music—Practical ...	75
		Western Music—do. ...	75

Note.—Every year the exact dates of Part III of the Intermediate Examination will be notified on receipt of information from the constituent and affiliated Colleges as to the different groupings of subjects offered by their candidates.

B.A. DEGREE EXAMINATION.**Part I—English Language and Literature.**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Composition ...	100
Second day ...	10—1	Modern Prose ...	100
Third day ...	10—1	Shakespeare ...	100
Fourth day ...	10—1	Modern Poetry ...	100
Total ...			400

Part II—A Second Language.

Days.	Hours.	Subjects.	Marks.
Fifth day ...	10—1	<i>Classical Language.</i> Text-books, Grammar, etc. ...	100
Sixth day ...	10—1	Translation* ...	100
Fifth day ...	10—1	<i>Modern European or Indian Languages.</i> Text-books, Grammar, etc. ...	100
Sixth day ...	10—1	Composition and Translation ...	100
Total ...			200

* In the case of Sanskrit, Hebrew, Arabic and Persian the papers will include Questions on the History of Literature—*Vide* Regulations.

Part III—Optional Groups.**(i-a)—Mathematics.**

Days.	Hours.	Subjects.	Marks.
Seventh day ...	10—1	Geometry ...	90
Eighth day ...	10—12	Dynamics ...	70
Do. ...	2—4	Calculus ...	70
Ninth day ...	10—1	Algebra and Trigonometry ...	90
Tenth day ...	10—12	Astronomy ...	80
Eleventh day ...	10—1	Hydrostatics, Properties of Matter and Heat ...	100
Total ...			500

(i-b)—Mathematics.

Seventh day ...	10—1	Geometry ...	90
Eighth day ...	10—12	Dynamics ...	70
Do. ...	2—4	Calculus ...	70
Ninth day ...	10—1	Algebra and Trigonometry ...	90
Tenth day ...	10—1	Optional Subject I ...	90
Eleventh day ...	10—1	Optional Subject II ...	90
Total ...			500

(ii)—Mathematics Main.

Seventh day ...	10—1	Geometry ...	100
Eighth day ...	10—12	Dynamics ...	75
Do. ...	2—4	Calculus ...	75
Ninth day ...	10—1	Algebra and Trigonometry ...	100
Total ...			350

(ii)—Physics Main.

Days.	Hours.	Subjects.	Marks.
Seventh day ...	10—1	Dynamics and Hydrostatics ...	60
Eighth day ...	10—1	Properties of Matter & Heat...	60
Ninth day ...	10—1	Light and Sound ...	60
Tenth day ...	10—1	Electricity and Magnetism ...	60
(Dates and hours of Practical Examination will be notified later.)	(6 hours)	Practical Examination (two exercises) ...	90
		Laboratory Note-books ...	20
		Total ...	350

(ii)—Chemistry Main.

Seventh day ...	10—1	General Theoretical and Physical Chemistry ...	80
Eighth day ...	10 - 1	Inorganic Chemistry ...	80
Ninth day ...	10—1	Organic Chemistry ...	80
(Dates and hours of Practical Examinations will be notified later.)	<i>Practical Examinations.</i>		
	(6 hours)	Inorganic Chemistry ...	80
	(3 hours)	Organic Chemistry ...	30
		*Laboratory Note-books.	
		Total ...	350

* At the practical examination candidates must submit to the examiner or examiners their laboratory Note-books duly certified by their Professors or Lecturers as a *bona fide* record of work done by the candidates.

Candidates who fail to submit properly certified note-books of their practical work will be debarred from practical examinations.

Group ii—Botany, Zoology, Geology and Physiology.**As Main Subjects**

Days.	Hours.	Subjects.	ii-d * Botany.	ii-e Zoology.	ii-f Geology.	ii-g Physiology.
Seventh day ...	10—1	Written I. ...	80	100	80	80
Eighth day ...	10—1	Written II. ...	80	100	80	80
(Dates and hours of Practical Exa- mination will be notified later.)	(3 hrs.)	Practical Examination I...	75	60	75	75
	(3 hrs.)	Do. II...	75	60	75	75
		Collections ...	20	...	20	...
		Laboratory Note-books ...	20	30	20	40
Total ...			350	350	350	350

* Botany ... { Written I—Thallophytes, Bryophytes, Pteridophytes, Gymnosperms and Histology.
Written II—Morphology and Taxonomy of Angiosperms, Plant Physiology and General Principles.

Group ii—(Subsidiary Subjects.)**Mathematics.**

Days.	Hours.	Subjects.	Marks.
Tenth day ...	10—1	I Paper ...	75
Eleventh day ...	10—1	II Paper ...	75
Total ...			150

Physics.

Days.	Hours.	Subjects.	Marks.
Tenth day ...	10—12	I Paper (Written) ...	50
Do. ...	2—4	II Paper (Written) ...	50
(Dates and hours of Practical Examinations will be notified later.)	(3 hrs.)	Practical Examination ...	50
Total ...			150

Chemistry.

Days.	Hours.	Subjects.	Marks.
Tenth day ...	10—1	<i>Written Examination.</i> General and Inorganic Chemistry ...	60
Eleventh day ...	10—12	Organic Chemistry ...	40
Date and hour of the Practical Examination will be notified later.	(3 hours)	<i>Practical Examination.</i> Inorganic Chemistry ...	50
Total ...			150

**Group ii—Botany, Zoology, Geology,
Physiology, Mechanical Engineering and
Electrical Engineering—(as Subsidiary Subjects.)**

Days.	Hours.	Subjects.	ii-d Botany.	ii-e Zoology.	ii-f Geology.	ii-g Physiology. Mechanical	Eng.	Electrical Eng.
Tenth day ...	10—12	I Paper (Written).	50	50	50	50	50	50
Do. ...	2—4	II Paper (Written).	50	50	50	50	50	50
Dates and hours of Practical Examinations to be notified later.)	(3 hrs.)	Practical Examination.	50	50	50	50	50	50
Total ...			150	150	150	150	150	150

(iii) - Philosophy

Days.	Hours.	Subjects.	Marks.
Seventh day ...	10—1	Psychology ...	100
Eighth day ...	10—1	Ethics ...	100
Ninth day ...	10—1	European Logic ...	100
Tenth day ...	10—1	Indian Logic or Indian Philosophical classic ...	100
Eleventh day ..	10—1	A European Philosophical classic ...	100
Total ...			500

(iii-a) Philosophy.

Seventh day ...	10—1	Psychology ...	100
Eighth day ...	10—1	Ethics ...	100
Ninth day ...	10—1	Politics ...	100
Tenth day ...	10—1	Outlines of European History or Constitutional History of Great Britain and Ireland ...	100
Eleventh day ...	10—1	General Indian History ...	
Total ...			500

(iv-a) History and Economics.

Seventh day ...	10—1	Politics ...	100
Eighth day ...	10—1	General Indian History ...	100
Ninth day ...	10—1	Constitutional History of Great Britain and Ireland ...	100
Tenth day ...	10—1	Outlines of European History.	100
Eleventh day ...	10—1	Economics—(General) ...	100
Total ...			500

(iv-b) Economics and History.

Days.	Hours.	Subjects	Marks.
Seventh day ...	10—1	Optional Subject—Politics ...	•100
Eighth day ...	10—1	Do. (General Indian History) ...	•100
Ninth day ...	10—1	Economics—Special ...	100
Tenth day ...	10—1	Optional Subject—Outlines of European History ...	•100
Eleventh day ...	10—1	Economics—General ...	100
Twelfth day ...	10—1	Modern Economic History of England and India ...	100
		Total ...	500

* Any two subjects.

V. Languages other than English.**(1) Sanskrit and Early Indian History.**

Seventh day ...	10—1	Books of the Early Period ...	80
Eighth day ...	10—1	Books of the Later Period I ...	80
Ninth day ...	10—1	Do. do. II ...	80
Tenth day ...	10—1	Grammar — Historical and Comparative ...	80
Eleventh day ...	10—1	History of Sanskrit Literature ...	80
Twelfth day ...	10—1	Early Indian History ...	100
		Total ...	500

(2) Urdu and Indian History—Muslim Period, or Arabic or Persian.

Seventh day ...	10—1	Prose Books ...	80
Eighth day ...	10—1	Poetry ...	80
Ninth day ...	10—1	Translation ...	80
Tenth day ...	10—1	Grammar, including Rhetoric and Prosody ...	80
Eleventh day ...	10—1	History of Language and History of Literature ...	80
Twelfth day ...	10—1	Indian History—Muslim Period or Arabic or Persian ...	100
		Total ...	500

(3) Arabic or Persian and Early Muslim History.

Days.	Hours.	Subjects.	Marks.
Seventh day ...	10—1	Prose Books ...	80
Eighth day ...	10—1	Poetry ...	80
Ninth day ...	10—1	Translation ...	80
Tenth day ..	10—1	Grammar, including Rhetoric and Prosody ...	80
Eleventh day ...	10—1	History of Arabic or Persian Language and Literature ...	80
Twelfth day ...	10—1	Early Muslim History ...	100
		Total ...	500

(4) A Dravidian Language or Oriya or Marathi, and a Cognate Subject or Sanskrit.

Seventh day ...	10—1	Set books and History of Literature I ...	80
Eighth day ...	10—1	Do Literature II ...	80
Ninth day ...	10—1	History of Language and Grammar ...	80
Tenth day ...	10—1	Comparative Grammar—Dravidian or Gaurian ...	80
Eleventh day ...	10—1	Composition ...	80
Twelfth day ...	10—1	Cognate Subject or Sanskrit... ..	100
		Total ...	500

(5) Greek or Latin and Greek or Roman History.

Seventh day ...	10—1	Set Books and History of Literature I ...	80
Eighth day ...	10—1	Do. Literature II ...	80
Ninth day ...	10—1	Prose Composition ...	80
Tenth day ...	10—1	Translation of unprepared passages ...	80
Eleventh day ...	10—1	Grammar ...	80
Twelfth day ...	10—1	Greek or Roman History ...	100
		Total ...	500

(6) French or German and Modern European History.

Days.	Hours.	Subjects.	Marks.
Seventh day ...	10—1	Set Books and History of Literature I ...	80
Eighth day ...	10—1	Do. Literature II ...	80
Ninth day ...	10—1	History of Language ...	80
Tenth day ...	10—1	Composition ...	80
Eleventh day ...	10—1	Translation ...	80
Twelfth day ...	10—1	Modern European History ...	100
Total ..			500

(7) Hebrew and History of the Jews.

Seventh day ...	10—1	Set Books I ...	80
Eighth day ...	10—1	Do. II ...	80
Ninth day ...	10—1	Translation ...	80
Tenth day ...	10—1	Grammar ...	80
Eleventh day ...	10—1	History of Language and Literature ...	80
Twelfth day ...	10—1	History of the Jews ...	100
Total ...			500

(8) Syriac and History of the Syrians.

Seventh day ...	10—1	Set Books I ...	80
Eighth day ...	10—1	Do. II ...	80
Ninth day ...	10—1	Translation ...	80
Tenth day ...	10—1	Grammar ...	80
Eleventh day ...	10—1	History of Language and Literature ...	80
Twelfth day ...	10—1	History of the Jews ...	100
Total ...			500

Gr. (vi.) Indian Music.

Days.	Hours.	Subjects.	Marks.
Seventh day	10—1	Theory (1st Paper) ...	150
Eighth day	10—1	Theory (2nd Paper)...	150
Dates and hours will be notified later.	3 hrs.	Practical Examination I ...	100
	3 hrs.	Do. II ...	100
		Total ...	500

Gr. (vii) Geography.

Days.	Hours.	Subjects.	Marks.
Seventh day...	10—1	Regional Geography— I Paper ...	100
Eighth day ..	10—1	Do. do. —II Paper ...	100
Ninth day ...	10—1	Economic Geography ...	100
Tenth day ...	10—1	Physical Basis of Geography ...	100
Eleventh day.	10—1	Cartography ...	100
		Total ...	500

Gr. (viii) Islamic History and Culture.

Days.	Hours.	Subjects.	Marks..
Seventh day ...	10—1	General History of Islam ...	100
Eighth day. ...	10—1	Civilisation and Culture of Islam ...	100
Ninth day. ...	10—1	History of India with reference to the Vol. of Islam.	100
Tenth day ...	10—1	* Politics ...	100
Eleventh day..	10—1	* Economics ...	100
		Total ...	500

* The Question paper: in the subjects shall be common to Groups (iv-a', (iv-b) and VIII.

B.A. (Honours) Degree Examination**PRELIMINARY EXAMINATION.**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	English Composition ...	100
Second day ...	10—1	English—Prose or English History.	100
Total ...			200

B.A. (Hons.) Degree Examination (Final).**Branch I (MATHEMATICS.)**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Pure Mathematics I ...	175
Second day...	10—1	Applied Mathematics I ...	175
Third day ..	10—1	Pure Mathematics II ...	175
Fourth day...	10—1	Applied Mathematics II ...	175
Fifth day ...	10—1	Pure Mathematics III ...	175
Sixth day ...	10—1	Applied Mathematics III ...	175
Seventh day	10—1	Optional Subject I ...	175
Eighth day .	10—1	Optional Subject II ...	175
Total ...			1,400

Branch II (PHILOSOPHY).*

Days	Hours.	Subjects.	Marks.
First day ...	10—1	Essay ...	200
Second day...	10—1	Psychology ...	200
Third day ...	10—1	Theory of Knowledge or Ethics ...	200
Fourth day...	10—1	Outlines of Indian Philosophy ...	200
Fifth day ...	10—1	European Philosophy (Descartes to Kant). ...	200
Sixth day ...	10—1	Special Subject I' ...	200
Seventh day.	10—1	Special Subject II ...	200
Total ...			1,400

* Candidates will be informed of the dates and hours of *viva voce* examination before the written examination is over.

Branch III (HISTORY).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Essay ...	200
Second day...	10—1	Indian History—General ...	200
Third day ...	10—1	* Economics—General ...	200
Fourth day...	10—1	Constitutional History of Great Britain and Ireland ...	200
Fifth day ...	10—1	Economics—Special Subject ...	200
Sixth day ...	10—1	Politics—General ...	200
Seventh day.	10—1	History—Special Subject ...	200
Eighth day...	10—1	Indian History—Special Subject ...	200
Ninth day ...	10—1	Politics—Special Subject ...	200
Tenth day ...	10—1	Indian History—Special Subject ...	200
Eleventh day	10—1	Economics—Special Subject ...	200
Total (for seven papers) ...			1,400

* In common with Economics I in Branch IV.

Branch iv (ECONOMICS.)

Days.	Hours	Subjects.	Marks.
First day ...	10—1	Essay	200
Second day ...	10—1	*Indian History—General (Optional)..	200
Third day ...	10—1	†Economics I	200
Fourth day...	10—1	Economics II	200
Fifth day ...	10—1	Economics—Special subject (Compulsory).	200
Sixth day ...	10—1	*Politics—General (Optional) ...	200
Seventh day.	10—1	Economic History	200
Eighth day...	10—1	*Economics—Special subject (Optional)	200
Total (for seven papers) ..			1,400

*Candidates should select two out of the three.

† In common with the Economics General I of Branch III.

Branch v (POLITICS.)

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Essay	200
Second day...	10—1	Political Theory of the State ...	200
Third day ..	10—1	† Economics (General)	200
Fourth day...	10—1	History of Political Thought ...	200
Fifth day ...	10—1	Political Institutions	200
Sixth day ...	10—1	History of Administrative and Constitutional development in India.	200
Seventh day.	10—1	Public Administrations—Principles and Practice (Optional).	200
Eighth day...	10—1	A period of topic of British Indian Administration (Optional).	200
Total (for seven papers) ...			1,400

† In common with the Economics General I of Branch III.

Branch vi—(TWO LANGUAGES OTHER THAN ENGLISH.)

The time-tables for the examinations in languages will be identical with the time-tables detailed under Group (v) of the B.A. Degree Courses (under the New Regulations) with the words 'Additional or Advanced Composition' substituted in the place of the Cognate Subject or Language detailed under Twelfth day, 10—1. Candidates for Honours will be required to answer the papers set for the B.A. Degree Examination in the languages selected for Honours. The examination in Part III of Group (vi) under the New Regulations for the B.A. Degree and Branch (vi) for the B.A. (Hons.) Degree shall commence on or after the Monday following the fourth Monday in March, as will be annually determined by the Syndicate and notified in the Gazette in the preceding February. The Syndicate shall so fix the dates of the examinations in Group (vi) and Branch (vi) as to avoid, as far as may be practicable, the setting of duplicate sets of question papers in the same subject.

Branch vii (ENGLISH LANGUAGE AND LITERATURE).*

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	History of the English Language ...	150
Second day ...	10—1	Shakespeare ...	175
Third day ...	10—1	Modern English Literature, First Paper	125
Fourth day...	10—1	Modern English Literature, Second Paper	125
Fifth day ...	10—1	Beowulf and other Old English Texts ...	150
Sixth day ...	10—1	Modern English Literature, Third Paper	125
Seventh day .	10—1	Chaucer and other Middle English Texts ...	150
Eighth day...	10—1	Essay ...	100
Ninth day ...	10—1	Special Period—First Paper	150
Tenth day ...	10—1	Special Period—Second Paper	150
Total ...			1,400

* Candidates will be informed of the dates and hours of the *visu* examination before the written examination is over.

Branch viii (SANSKRIT LANGUAGE AND LITERATURE).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Comparative Philology and Com- parative Grammar ...	200
Second day...	10—1	History of the Sanskrit language and Literature ...	150
Third day ...	10—1	Prescribed Text-books; General ...	150
Fourth day ..	10—1	Grammar, Prosody and Poetics ...	150
Fifth day ...	10—1	Translation ...	150
Sixth day ...	10—1	Prescribed Text-books—Special (i) ...	150
Seventh day.	10—1	Do. do. (ii) ...	150
Eighth day...	10—1	Do. do. (iii) ...	150
Ninth day ...	10—1	Essay	150
Total ...			1,400

Branch ix (ARABIC LANGUAGE AND LITERATURE).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Comparative Philology and Comparative Grammar	200
Second day...	10—1	History of the Arabic Language and Literature	150
Third day ...	10—1	Prescribed Text-books :—General	150
Fourth day...	10—1	Grammar, Prosody and Poetics ..	150
Fifth day ...	10—1	Translation	150
Sixth day ...	10—1	Prescribed Text-books :—Special (i) ...	150
Seventh day	10—1	Do. do. do. (ii) ...	150
Eighth day	10—1	Do. do. do. (iii) ...	150
Ninth day ..	10—1	Essay	150
Total ...			1,400

Branch x (SYRIAC LANGUAGE AND LITERATURE).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Comparative Philology and Comparative Grammar.	200
Second day...	10—1	History of the Syriac Language and Literature.	150
Third day ...	10—1	Prescribed Text-books—General ...	150
Fourth day...	10—1	Grammar, Prosody and Poetics ...	150
Fifth day ...	10—1	Translation ...	150
Sixth day ...	10—1	Prescribed Text-books—Special I ...	150
Seventh day.	10—1	Prescribed Text-books—Special II ...	150
Eighth day...	10—1	Prescribed Text-books—Special III ...	150
Ninth day ...	10—1	Essay ...	150
Total ...			1,400

Branch xi—(A DRAVIDIAN LANGUAGE OR URDU AND ITS LITERATURE).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	History of Language and Philology ...	200
Second day...	10—1	History of Literature and Literary Criticism ...	200
Third day ...	10—1	Prescribed Text-books (General) ...	150
Fourth day...	10—1	Prescribed Text-books (Special) ...	150
Fifth day ...	10—1	Grammar, Prosody and Poetics ...	150
Sixth day ...	10—1	Essay ...	200
Seventh day.	10—1	Translation from English into the language ...	150
Eighth day...	10—1	South Indian History and Inscriptions (in the case of Dravidian languages) and Arabic, Persian or Hindi (in the case of Urdu) ...	200
Total ...			1,400

Branch xii—(ISLAMIC HISTORY AND CULTURE.)

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Advanced History of Islam ...	200
Second day...	10—1	Islamic Law and Constitution ...	200
Third day ...	10—1	*Economics (General) ...	200
Fourth day...	10—1	Special Subject I ...	200
Fifth day ...	10—1	Special Subject II ...	200
Sixth day ...	10—1	*Politics ...	200
Seventh day.	10—1	Essay ...	200
Total ...			1,400

* These papers shall be the same as for Branches [I] and IV.

B.Sc. DEGREE EXAMINATION.

PART I

(a) English.

Days	Hours	Subjects	Marks.
First day ...	10—1	English Composition ...	100
Second day...	10—1	English Prose ...	100
Total ...			200

(b) (i) Modern Indian Languages.

Days.	Hours.	Subjects.	Marks.
First day ..	10—1	Translation ...	100
	2—5	Composition ...	100
		Total ...	200

(b) (ii) Classical and Modern Foreign Languages.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Translation ...	100
	2—5	Prescribed Text-books ...	100
		Total ...	200

B. Sc. DEGREE EXAMINATION.

PART II.

Mathematics (Main).

Days	Hours	Subjects	Marks.
Seventh day.	10—1	Algebra and Trigonometry ...	100
Eighth day...	10—1	Geometry ...	100
Ninth day ...	10—1	Calculus ...	100
Tenth day ...	10—1	Dynamics ...	100
Total ...			400

Physics (Main).

Seventh day.	10—1	Dynamics and Hydrostatics	...	70
Eighth day...	10—1	Properties of Matter & Heat	...	70
Ninth day ...	10—1	Light and Sound	... ..	70
Tenth day ...	10—1	Electricity and Magnetism	...	70
Dates and hours of Prac- tical Exami- nations will be notified later.	(6 hours)	Practical Examination	... ..	100
		Laboratory Note-books	...	20
Total ..				400

XX.] TIME-TABLES FOR THE B.Sc. DEGREE EXAMINATION.

877

Chemistry (Main).

Days.	Hours.	Subjects.			Marks.
Seventh day	10—1	General Chemistry	...	...	80
Eighth day...	10—1	Inorganic Chemistry	...	...	80
Ninth day ...	10—1	Organic Chemistry	...	...	100
Dates and hours of Prac- tical Exami- nation will be notified later.	(3 hours.) (6 hours.)	Practical Examination (Organic)	...	40	
		Do. do. (Inorganic)	...	80	
		Laboratory Note-books	...	20	
Total ...					400

Botany (Main).

Seventh day	10—1	Written Examination in the Main	I ...	100
Eighth day...	10—1	Do.	do. II ...	100
Dates and hours of Practical Examination will be notified later.	(3 hours.) (3 hours.)	Practical Examination	I ...	70
		Do.	do. II ...	70
		Laboratory Note-books	...	40
		Collection of plants	...	20
Total ...				400

Zoology (Main).

Seventh day.	10—1	Written Examination in the Main	I ...	120
Eighth day...	10—1	Do.	do. II ...	120
Dates and hours of Prac- tical Exami- nation will be notified later.	(3 hours.) (3 hours.)	Practical Examination	I ...	60
		Do.	do. II ...	60
		Laboratory Note-books	...	40
Total ...				400

Geology (Main).

Days.	Hours.	Subjects			Marks.	
Seventh day	10—1	Written Examination	I	...	100	
Eighth day...	10—1	Do.	do.	II	...	100
Dates and hours of Practical Examination will be notified later.	(3 hours) (3 hours.)	Practical Examination	I	...	75	
		Do.	do.	II	...	75
		Laboratory Note-book	...	25		
		Collection and Field work notes	...	25		
Total					...	400

Mathematics (Subsidiary).

Tenth day ...	10—1	Paper I—Algebra and Calculus ...	75
Eleventh day	10—1	Paper II—Trigonometry and Analytical Geometry. ...	75
Total ..			150

Physics (Subsidiary).

Tenth day ...	10—12	Hydrostatics, Properties of Matter and Heat. ...	50
Do ...	2—4	Light Electricity and Magnetism ...	50
Dates and hours of Practical Examination will be notified later.	(3 hrs.)	Practical Examination ...	50
Total ...			150

Chemistry (Subsidiary).

Days.	Hours.	Subjects.	Marks.
Tenth day ...	10—1	General and Inorganic Chemistry ...	60
Eleventh day	10—12	Organic Chemistry ...	40
Dates and hours of Practical Examination will be notified later.	(3 hours.)	Practical Examination ...	50
Total ...			150

Botany (Subsidiary).

Tenth day ...	10—12	Written Examination I ...	50
Do. ...	2—4	Do do. II ...	50
Dates and hours of Practical Examination will be notified later.	(3 hours.)	Practical Examination ...	50
Total ...			150

Zoology (Subsidiary).

Tenth day ...	10—12	Written Examination I ...	50
Do. ...	2—4	Do do. II ...	50
Dates and hours of Practical Examination will be notified later.	(3 hours.)	Practical Examination ...	50
Total ...			150

Geology (Subsidiary).

Tenth day ...	10—12	Written Examination I ...	50
Do. ...	2—4	Do do. II ...	50
Dates and hours of Practical Examination will be notified later.	(3 hours.)	Practical Examination ...	50
Total ..			150

Physiology (Main.)

Days.	Hours.	Subjects.	Marks.
Seventh day.	10—1	Written Examination I	...
Eighth day...	10—1	Do. II	...
Dates and hours of Practical Examination will be notified later.	(3 hrs.)	Practical Examination I	...
	(3 hrs.)	Do. II	...
		Laboratory Note-book	...
Total			...

120

120

40

60

40

400

Physiology (Subsidiary.)

Tenth day ...	10—12	Written Examination I	...
Do. ...	2—4	Do II	...
Dates and hours of Practical Examination will be notified later.	(3 hrs.)	Practical Examination	...
Total			...

50

50

50

150

Mechanical Engineering (Subsidiary.)

Tenth day...	10—12	Written Examination I	...
Do. ...	2—4	Do do II	...
Dates and hours of Practical Examination will be notified later	(3 hours)	Practical Examination	...
Total			...

50

50

50

150

Electrical Engineering (Subsidiary.)

Tenth day.	10—12	Written Examination I	...
Do. ...	2—4	Do do II	...
Dates and hours of Practical Examination will be notified later.	(3 hours)	Practical Examination	...
Total			...

50

50

50

150

**B. Sc. (Honours) Degree Examination.
Part I—English.**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Composition ...	100
Second day...	10—1	Prose ...	100
Total ...			200

French or German

First day ...	10—1	Translation ...	100
Second day	10—1	Prescribed Text-books ...	100
Total ...			200

B. Sc. (Honours) Degree Examination.

PART II.

Branch I—Mathematics.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Pure Mathematics I ...	17½
Second day...	10—1	Applied Mathematics I ...	17½
Third day ...	10—1	Pure Mathematics II ...	17½
Fourth day...	10—1	Applied Mathematics II ...	17½
Fifth day ...	10—1	Pure Mathematics III ...	17½
Sixth day ...	10—1	Applied Mathematics III ...	17½
Seventh day.	10—1	Optional subject I ...	17½
Eighth day...	10—1	Optional subject II ...	17
Total ...			1,400

Branch II—Physics (Main subject.)

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Properties of Matter ...	100
Second day...	10—1	Heat and Sound ...	100
Third day ...	10—1	Sound and Light ...	100
Fourth day...	10—1	Magnetism and Electricity ...	100
Fifth day ...	10—1	Optional subject ...	150
Sixth Day ...	10—1	Modern Physics ...	100
Dates and hours of Practical Examinations will be notified later.	3 hours each.	Four Practical Examinations ...	400
		Laboratory Note-books ...	200
		Total marks—Main subject ...	1,250
		Total marks—Subsidiary subject (Vide B. Sc. Examn.) ...	150
		Grand Total ...	1,400

Branch III—Chemistry (Main subject.)

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	General Chemistry ...	125
Second day...	10—1	Physical Chemistry ...	125
Third day ...	10—1	Inorganic Chemistry ...	125
Fourth day...	10—1	Organic Chemistry ...	125
Fifth day ...	10—1	Optional Subject ...	150
Dates and hours of Practical Examinations will be notified later.	3 hours each.	Four Practical Examinations ...	400
		Laboratory Note-books ...	200
		Total marks—Main subject ...	1,250
		Total marks—Subsidiary subject (Vide B. Sc. Examn.) ...	150
		Grand Total ...	1,400

Branch IV—Botany (Main subject).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Written Examination I (Algae, Fungi, etc.)	150
Second day...	10—1	Written Examination II (Pteridophytes, etc.)	150
Third day ...	10—1	Written Examination III (Histology, etc.)	150
Fourth day...	10—1	Written Examination IV (Systematic Botany, etc.)	150
Fifth day ...	10—1	Written Examination (Special Subject)	150
Dates and hours of Practical Examinations will be notified later.	3 hours each.	Practical Examination I	100
		Do. II	100
		Do. III	100
		Do. IV	100
		Laboratory Records and Collections	100
		Total marks—Main subject	1,250
		Subsidiary subject I { (<i>Vide</i> B. Sc. Examn.)	150
Grand Total ...			1,400

Branch V—Zoology (Main Subject).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Written Examn. I—Invertebrata ...	15
Second day...	10—1	Do. II—Chordata ...	15
Third day ...	10—1	Do. III—Vertebrate Em- bryology ...	15
Fourth day...	10—1	Do. IV—General Principles.	15
Fifth day ..	10—1	Do. V—Special subject ...	15
Dates and hours of Practical Examinations will be notified later.	3 hours each.	Practical Examination I ...	10
		Do. II ...	10
		Do. III ...	10
		Do. IV ...	10
		Laboratory record ...	10
		Total marks—Main subject ...	1,250
		Subsidiary subject I { (<i>Vide</i> B. Sc. Examn.) ...	150
Grand Total ..			1,400

Branch VI—Geology (Main subject).

Days.	Hours.	Subjects.	Marks.
First Day ...	10—1	Written Examination I—General Geology and Structural ...	150
Second Day	10—1	Do II—Stratigraphy and Palaeontology ...	150
Third Day ...	10—1	Do. III—Mineralogy ...	150
Fourth Day	10—1	Do. IV—Petrology ...	150
Fifth day ...	10—1	Special Subject ...	150
Dates and hours of Practical Examinations will be notified later.	3 hours each.	Practical Examination I ...	100
		Do. II ...	100
		Do. III ...	100
		Do. IV ...	100
		Laboratory Note-books and other records re-Practical work and Specimens ...	100
		(Viva voce questions may be asked)	
		Total marks—Main subject ...	1,250
		Subsidiary Subject I { (Viva B. Sc. Examn.) ...	150
Grand Total ...			1,400

Notes.—The time-tables for the Subsidiary subjects shall be the same as for the Subsidiary subjects under B. Sc. (Pass).

VII—Physiology (Main).

Days.	Hours.	Subjects.	Marks.	
First day ...	10—1	Written Examn. I—Gen ral Physiology	150	
Second day...	10—1	Do. II—Human Physiology	150	
Third day ...	10—1	Do. III—Human Physiology	150	
Fourth day...	10—1	Do. IV—Bio-chemistry ...	150	
Fifth day ...	10—1	Do. V—Special Subject ...	150	
Dates and hours of Practical Examinations will be notified later.	3 hours each.	{ Practical Examination I ...	100	
			Do. II ...	100
			Do. III ...	100
			Do. IV ...	100
			Laboratory Note-books ...	100
		Total ...	1,250	
		Subsidiary Subject ...	150	
Grand Total ...			1,400	

AGRICULTURE.**B.Sc. Ag. Degree Examination.****First Examination.**

Days.	Hours.	Subjects.	Marks.
First day ...	7—10	Agriculture (Written)	60
Second day.	7—10	Botany do.	60
Third day ...	7—10	Chemistry do.	60
Fourth day.	7—10	Zoology do.	60
Dates and hours of Practical Examina- tions will be notified later.		{ Agriculture (Practical)	40
		{ Botany do.	40
		{ Chemistry do.	40
		{ Zoology do.	40
Total ...			400

Second Examination.

First day ...	7—10	Agriculture—Plant Husbandry I (Written).	100
Second day	7—10	do. Do. II do.	100
Third day ...	7—10	Agricultural Engineering (Written).	60
Fourth day.	7—10	Agricultural Zoology do.	60
Fifth day ...	7—10	Animal Hygiene do.	60
Dates and hours of Practical Examina- tions will be notified later		{ Agriculture—Plant Husbandry (Practical).	100
		{ Agricultural Engineering do.	40
		{ Agricultural Zoology do.	40
		{ Animal Hygiene do.	40
Total ...			600

Final Examination.

Days.	Hours.	Subjects.	Marks.
First day ...	7—10	Agriculture—Economics and Farm Management (Written).	100
Second day...	7—10	Agriculture—Animal Husbandry do	100
Third day ...	7—10	Agricultural Botany I do	100
Fourth day...	7—10	Do II do	100
Fifth day ...	7—10	Agricultural Chemistry I do	100
Sixth day ...	7—10	Do II do	100
Dates and hours of Practical Examinations will be notified later.		{ Agriculture-Economics and Farm Management. (Practical).	100
		{ Agriculture-Animal Husbandry do	100
		{ Agricultural Botany I do	50
		{ do II do	50
		{ Agricultural Chemistry I do	50
		{ Do II do	50
Total ...			1,000

B. V. Sc. DEGREE EXAMINATION.**Preliminary Examination.**

Days.	Hours.	Subjects.	Marks.
First day	10—1	Biology (Written)	100
Second day	10—1	Chemistry (Written)	100
Dates and hours of Practical and Oral Examinations will be notified later.		{ Biology (Oral)	100
		{ Chemistry (Oral)	50
		{ Do. (Practical)	50
Total			400

Intermediate Examination.

Days.	Hours	Subjects.	Marks.
First day ...	10—1	Physiology (Written) ...	100
Second day ...	10—1	Pathology (Written) ...	100
Third day ...	10—1	Parasitology (Written) ...	100
Dates and hours of Practical and Oral Examinations will be notified later.		{ Physiology (Oral) ...	50
		{ Pathology (Oral) ...	50
		{ Parasitology (Oral) ...	50
		{ Physiology (Practical) ...	50
		{ Pathology (Practical) ...	50
		{ Parasitology (Practical) ...	50
Total ...			600

Final Examination.

Days	Hours.	Subjects.	Marks
First day ...	10—1	Preventive Medicine (Written) ...	100
Second day ...	10—1	Meat and Milk Inspection (Written) ...	100
Third day ...	10—1	Hygiene (Written) ..	100
Dates of Oral Examinations will be notified later.		Preventive Medicine (Oral) ...	100
		Meat and Milk Inspection (Oral)...	100
		Hygiene (Oral) ...	100
Total ...			600

TEACHING.

L.T. DEGREE EXAMINATION.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Theory and Practice of Education A.B.C. I...	100
Second day...	10—1	Theory and Practice of Education A.B.C. II...	100
Third day ...	10-11-30	Special Subject	50
Fourth day.	10—1	Methods of Teaching English D-I ...	100
Fifth day ...	10—1	Methods of Teaching an Optional Subject D-2	100
Total ...			450

LAW.

FIRST EXAMINATION IN LAW.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Jurisprudence	100
Second day...	10—1	Roman Law	100
Third day ...	10—12	Indian Constitutional Law ...	70
Fourth day...	10—1	The Law of Torts	100
Fifth day ...	10—1	Contracts, including Negotiable Instru- ments and Specific Relief I ...	100
Sixth day ...	10—1	Contracts, including Negotiable Instru- ments and Specific Relief II ...	100
Total ...			570

B.L. DEGREE EXAMINATION.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Law of Property I (Real property, Trust and Easement) ...	100
Second day.	10—1	Law of Property II (Transfer of property Act) ...	100
Third day ...	10—12	Madras Land Tenures ...	70
Fourth day.	10—1	Hindu Law ...	120
Fifth day ...	10—12	Muhammadian Law ...	80
	2—4	Law of Evidence ...	80
Sixth day ...	10—1	Criminal Law ...	100
Total ...			650

M.L. DEGREE EXAMINATION.

Branch I—Jurisprudence.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Jurisprudence—General ...	150
Second day.	10—1	Comparative Jurisprudence, with specific reference to Roman, Hindu and Muhammadian Systems ...	150
Third day ...	10—1	History of the Common Law of England ...	150
Fourth day...	10—1	History of Equity and Equity Jurisprudence ...	150
Fifth day ...	10—1	Legislation (Theory Method and interpretation) ...	150
		Special Subjects—	
Sixth day ...	10—1	Roman Law, or	
		Continental Civil Law, or	
Seventh day.	10—1	Ancient Law and custom including Customary Law in India, (including Burma) ...	150
		Essay ...	200

Total ... | 1,100

Branch II—Constitutional Law.

Days.	Hours.	Subjects.	Marks
First day ...	10—1	Constitutional Law of England and its History ...	150
Second day.	10—1	Indian Constitutional Law and its History ...	150
Third day ...	10—1	Constitutional Law of the British Dominions and other countries, e.g., U.S.A. Japan, Germany ...	150
Fourth day ...	10—1	Public Authorities, Corporations and Officers ...	150
Fifth day ...	10—1	Law of Elections ...	150
Sixth day ...	10—1	British India and the Indian States (with Special reference to Treaties) ...	150
Seventh day.	10—1	Essay ...	200
Total ...			<u>1,100</u>

Branch III—International Law.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Public International Law with documents—I Paper ...	150
Second day...	10—1	Public International Law with documents—II Paper ...	150
Third day ...	10—1	Private International Law—General ...	150
Fourth day ...	10—1	Do. Domicile ...	150
Fifth day ...	10—1	Prize Law ...	150
Sixth day ...	10—1	Special Subject— Outlines of the History of Diplomacy and Diplomatic Practice, or League of Nations (Constitution and Powers especially International Court of Justice), or The Monroe Doctrine and Interstate Law in the United States and International Law in the Far East, or British India and the Indian States (including Treaties) ...	150
Seventh day.	10—1	Essay ...	200
Total ...			1,100

Branch IV—Torts and Crimes.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Theory of Crimes and the punishments including Criminology ...	150
Second day...	10—1	Law of Crimes and Criminal Procedure in India	150
Third day ...	10—1	History of Criminal Law and Procedure in England	150
Fourth day...	10—1	Comparative Criminal Jurisprudence including Procedure	150
Fifth day ...	10—1	Law of Torts and its History ...	150
Sixth day ...	10—1	Negligence and Nuisance and Libel and Slander	150
Seventh day	10—1	Essay	200
Total ...			1,100

Branch V—Law of Obligations.
(CONTRACTS AND TORTS).

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Law of Contracts and its History ...	150
Second day...	10—1	*Agency and Partnership	150
Third day ...	10—12	Remedies of Specific Performance, Injunctions and Damages, and their History	150
Fourth day...	10—1	*Negotiable Instruments ...	150
Fifth day ...	10—1	Law of Torts and its History ...	150
Sixth day ...	10—1	*Negligence, Nuisance, Libel and Slander ...	150
Seventh day	10—1	Essay	200
Eighth day...	10—1	*Sale of Goods and Bailments and Carriers	150
Ninth day ...	10—1	*Domestic Relations, Husband and Wife Parent and Child, Master and Servant...	150
Total (of seven papers) ...			1,100

Note :—Candidates may select any three of the five papers starred (*)

Branch VI—Mercantile Law.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Company Law ...	150
Second day...	10—1	Agency and Partnership ..	150
Third day ...	10—1	Banking including Negotiable instru- ments ...	150
Fourth day...	10—1	Sale of Goods	150
Fifth day ...	10—1	Special Subject— Bankruptcy, or Patents, Copyright and Trade Marks, or Insurance—Life, Fire and Marine ...	150
Sixth day ...	10—1	Maritime Law (Merchant Shipping, Bills of Lading, Charter-parties and Colli- sions) ...	150
Seventh day	10—1	Essay ...	200
Total ...			1,100

Branch VII—Personal Laws.

Days.	Hours.	Subjects	Marks.
First day ...	10—1	Hindu Law—Adoption, Marriage and Guardianship ...	150
Second day...	10—1	Hindu Law—Joint Family and Succes- sion ...	150
Third day ...	10—1	Hindu Law Texts and their History and rules of Interpretation ...	150
Fourth day...	10—1	Law of Hindu and Muhammadan En- dowments ...	150
Fifth day ...	10—1	Muhammadan Law and its History ...	150
Sixth day ...	10—1	Statute Law relating to Guardianship, Marriage and Succession in India ...	150
Seventh day	10—1	Essay	200
Total ...			1,100

Branch VIII—Transfer of Property.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Law of Transfer of Property—In Eng- land and in India ...	150
Second day...	10—1	Vendors and Purchasers and Mortgages ...	150
Third day ...	10—1	Wills, Succession and Bankruptcy ...	150
Fourth day...	10—1	Compulsory and Judicial Sales ...	150
Fifth day ...	10—1	Law of Private Trusts ...	150
Sixth day ...	10—1	Public Trusts and Charities ...	150
Seventh day	10—1	Essay	200
Total ...			1,100

Branch IX—Real and Personal Property.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Real Property	150
Second day...	10—1	Personal Property	150
Third day ..	10—1	Highways—including Foreshore and Sea- shore	150
Fourth day...	10—1	Easements and Waters	150
Fifth day ...	10—1	Land Tenures in India—Customary ...	150
Sixth day ...	10—1	Land Tenures in India—Statute-Law ...	150
Seventh day.	10—1	Essay	200
Total ...			1,100

MEDICAL EXAMINATIONS.

Pre-Registration Examination.

Days.	Hours.	Subjects	Marks.
First day ...	10—1	Inorganic Chemistry (Written) ...	100
Second day...	10—1	Physics (Written) ...	100
Third day ...	10—1	Biology (Written) ...	100
Dates and hours will be duly notified.	3 hours	Inorganic Chemistry (Practical) ...	50
		Physics (Practical) ...	50
		Biology (do.) ...	50
		Inorganic Chemistry (Oral) ...	50
		Physics (Oral) ...	50
		Biology (Oral) ...	50
Total ...			600

XX] TIME-TABLES FOR THE FIRST AND SECOND 897
M.B. & B.S. EXAMINATIONS.

FIRST M.B. & B.S. EXAMINATION.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Organic Chemistry (Written) ...	50
Second day ...	10—1	Anatomy including Elements of Human Embryology (Written) ...	100
Third day ...	10—1	Physiology including Biochemistry (Written) ...	100
Dates and hours will be duly notified.		Organic Chemistry (Practical) ...	50
		Do. (Oral) ...	50
		Anatomy including Elements of Human Embryology (Dissections) ...	50
		Do. (Oral) ...	50
		Physiology including Biochemistry (Practical and Oral) ...	100
Total ...			550

SECOND M.B. & B.S. EXAMINATION.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Pharmacology (Written)	100
Second day ...	10—1	Hygiene (Written)	100
Third day ...	10—1	General Pathology with Bacteriology (Written)	100
Fourth day...	10—1	Ophthalmology (Written)	50
Dates and hours will be duly notified.	{	Pharmacology (Practical)	50
		Do. (Oral)	50
		Hygiene (Practical and Oral)	50
		General Pathology with Bacteriology (Practical)	50
		Do. do. (Oral)	50
		Ophthalmology (Practical and Oral)	50
Total ...			650

TIME-TABLES FOR THE M.D. DEGREE [APP. EXAMINATION.

FINAL M.B. & B.S. DEGREE EXAMINATION.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Forensic Medicine (Written) ...	100
Second day...	10—1	Medicine (Written) ...	100
Third day ...	10—1	Surgery (Written) ...	100
Fourth day...	10—1	Obstetrics and Gynaecology (Written) ...	100
Dates and hours will be notified later.	{	Forensic Medicine (Oral) ...	50
		Medicine (Clinical) ...	150
		Do. (Oral) ...	100
		Surgery (Clinical) ...	150
		Do. (Oral) ...	50
		Operative Surgery ...	50
		Obstetrics and Gynaecology (Clinical, Practical and Oral) ...	100
Total ...			1,050

EXAMINATION FOR THE DIPLOMA IN MIDWIFERY. (D. G. O.)

First day ...	10—1	Midwifery ...	100
Second day...	10—1	Gynaecology and Diseases of a new born Child ...	100
Third day ...	10—4	Clinical and <i>viva voce</i> examinations ...	100
Total ...			300

M. D. DEGREE EXAMINATION.

BRANCH I Medicine.

Days.	Hours.	Subjects.
First day ...	10—1	Medicine (General)
Second day...	10—1	Medicine, including Mental Diseases and Pathology. First Paper.
Third day ...	10—1	Medicine, including Mental Diseases and Pathology. Second Paper.
Fourth day...	10—4	Clinical and Oral Examinations.

BRANCH II
Midwifery, etc.

Days.	Hours.	Subjects.
First day ...	10—1	Medicine (General).
Second day...	10—1	Midwifery and Diseases of Women and Children, including Pathology. First Paper.
Third day ...	10—1	Midwifery and Diseases of Women and Children including Pathology. Second Paper.
Fourth day ...	10—1	Essay.
Fifth day ...	10—4	Clinical and Oral Examinations.

BRANCH III
Pathology.

First day ...	10—1	Medicine (General).
Second day...	10—1	Pathology. First Paper.
Third day ...	10—1	Pathology. Second Paper.
Fourth day...	10—4	Practical and Oral Examinations.

BRANCH IV
Tropical Medicine.

First day ..	10—1	Medicine (General).
Second day..	10—1	Tropical Medicine, including the Pathology of Tropical Diseases. First Paper.
Third day ..	10—1	Tropical Medicine, including the Pathology of Tropical Diseases. Second Paper.
Fourth day...	10—4	Clinical and Oral Examinations.

**900 TIME-TABLES FOR THE M.S. & B.S.Sc. [APP.
DEGREE EXAMINATIONS.**

M. S. DEGREE EXAMINATION.

Days.	Hours.	Subjects.
First day ..	10—1	Surgery. First Paper.
Second day...	10—1	Surgery. Second Paper.
Third day ..	10—1	Surgical Anatomy and Pathology.
Fourth day.	10—1	Operative Surgery and the use of instruments.
Fifth day ..	10—1	Clinical and Oral Examinations.

B. S. Sc. DEGREE EXAMINATION.

PART I.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Chemistry and Physics in relation to Public Health, and Climatology and Meteorology (Written paper) ...	100
Second day...	10—1	Bacteriology (Written paper) ...	100
Third day ...	10—12	Medical Entomology and Parasitology (Written paper) ...	100
Fourth day...	10—2	Chemistry and Physics in relation to Public Health (Practical) ...	100
	3—5	Chemistry and Physics in relation to Public Health (Oral) ...	50
Fifth day ..	10—1	Bacteriology (Practical) ...	100
	2—4	Do (Oral) ...	50
Sixth day ...	10—1	Medical Entomology and Parasitology (Practical) ...	100
	2—4	Medical Entomology and Parasitology (Oral) ...	50
		Total ...	750

PART II

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Principles and Practice of Public Health including Sanitary Engineering (Written paper) ...	100
Second day...	10—1	Epidemiology and Infectious Diseases (Written paper) ...	100
Third day ...	10—12	Sanitary Law and Vital Statistics (Written paper) ...	100
	2—5	Principles and Practice of Public Health (Oral) ...	50
Fourth day...	7—10	Epidemiology and Infectious Diseases (Practical) ...	50
	10—1	Epidemiology and Infectious Diseases (Oral) ...	50
	2—5	Sanitary Law and Vital Statistics (Oral)...	50
Fifth day ...	7—1	Public Health Administration (report on sanitary inspection) ...	150
		Total ...	650

ENGINEERING.

FIRST EXAMINATION IN ENGINEERING.

Days.	Hours.	Nos.	Question papers.	Marks.
First day ...	10—1	1	Mathematics I ...	100
Second day...	10—1	2	Mathematics II ...	100
Third day ...	10—12	3	Physics ...	75
	2—4	4	Chemistry ...	75
Fourth day...	10—1	5	Applied Mechanics ...	100
Fifth day ...	10—12	6	Surveying ...	75
	2—4	7	Civil Engineering I ...	75
Sixth day ...	10—1	8	Civil Engineering II ...	100
Seventh day.	10—1	9	Mechanical Engineering ...	100
Eighth day...	10—1	10	Electrical Engineering ...	100
Ninth day ...	2—5	11	Geometrical Drawing ...	100
Tenth day ...	10—1	12	Building Drawing ...	100
Eleventh day	10—1	13	Machine Drawing ...	100
			Total ...	1,200

B. E. Degree Examination.**Civil Branch.**

Days,	Hours.	Nos.	Question papers.	Marks.
First day ...	10-1	1	Mathematics I ...	100
Second day...	10-1	2	Mathematics II ...	100
Third day ...	10-1	3	Strength of Materials and Theory of Structures I ...	100
Fourth day...	10-1	4	Strength of Materials and Theory of Structures II ...	100
Fifth day ...	10-1	5	Hydraulics ...	100
Sixth day ...	10-1	6	Structural Engineering I ...	100
Seventh day.	10-1	7	Structural Engineering II ...	100
Eighth day...	10-1	8	Highway Engineering and Railway Engineering ...	100
Ninth day ...	10-1	9	Civil Engineering Drawing I ...	100
Tenth day ...	10-1	10	Irrigation Engineering and Dock and Harbour Engineering ...	100
Eleventh day	10-1	11	Sanitary Engineering ...	100
Twelfth day.	10-1	12	Surveying ...	100
Thirteenth day	10-1	13	Civil Engineering Drawing II ...	100
...	...	...	Engineering Laboratory Note books, Survey field books, Drawings and Designs ...	100
Total ...				1,400

NOTE.—Paper Nos. 1, 2 and 3 are common to all branches of Engineering.

Mechanical Branch.

Days.	Hours.	Nos.	Question papers.	Marks.
First day ...	10-1	1	Mathematics I ...	100
Second day...	10-1	2	Mathematics II ...	100
Third day ...	10-1	3	Strength of Materials and Theory of Structures ...	100
Fourth day.	10-1	4	Theory of Machines ...	100
Fifth day ...	10-1	5	Electrical Technology I ...	100
Sixth day ...	10-1	6	Do II ...	100
Seventh day.	10-1	7	Heat Engines I ...	100
Eighth day...	10-1	8	Heat Engines II ...	100
Ninth day ...	10-1	9	Machine Drawing and Design I ...	100
Tenth day ...	10-1	10	Fuels, Gas plants and Boilers ...	100
Eleventh day	10-1	11	Hydraulic Machinery ...	100
Twelfth day.	10-1	12	Workshop Practice and Machine Tools ...	100
Thirteenth "	10-1	13	Machine Drawing and Design II ...	100
...	...	...	Engineering Laboratory Note-books; Drawings and Designs ...	100
Total ...				1,400

NOTE.—Papers Nos. 1, 2 and 3 are common to all branches of Engineering.
 4, 5 and 6 are common with Electrical Branch.

Electrical Branch.

Days	Hours	Nos.	Question papers.	Marks.
First day ...	10-1	1	Mathematics I ...	100
Second day...	10-1	2	Mathematics II ...	100
Third day ...	10-1	3	Strength of Materials & Theory of structures ...	100
Fourth day...	10-1	4	Theory of Machines ...	100
Fifth day ..	10-1	5	Electrical Technology I ...	100
Sixth day ...	10-1	6	Do. II ...	100
Seventh day,	10-1	7	Heat Engines ...	100
Eight day ...	10-1	8	Principles of Electrical Machinery I.	100
Ninth day ...	10-1	9	Principles of Electrical Machinery II.	100
Tenth day ..	10-1	10	Electrical Measurements and Measuring Instruments ...	100
Eleventh day	10-1	11	Power Generation, Transmission and Utilization I ...	100
Twelfth day.	10-1	12	Power Generation, Transmission and Utilization II ...	100
Thirteenth day.	10-1	13	Machine Drawing and Design ...	100
...	...	...	Engineering Laboratory Note books, Drawings and Designs ...	100
Total ...				1,400

NOTE.—Papers Nos. 1, 2 and 3 are common to all branches of Engineering,
4, 5 and 6 are common with Mechanical Branch.

ORIENTAL LEARNING.**ORIENTAL TITLES EXAMINATION.**

*Mimamsa, Vedanta, Nyaya, Vyakarana,
Sahitya, Jyotisa or Ayurveda Siromani.
Preliminary*

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Text books (i) General ...	200
Second day...	10—1	Prescribed Text-books (ii) General ...	200
Third day ...	10—1	Prescribed Text-books—Special (i) ...	150
Fourth day...	10—1	Prescribed Text-books—Special (ii) ...	150
		Total ...	700

Final

First day ...	10—1	History of Sanskrit Language and Literature ...	200
Second day...	10—1	Prescribed Text-books—Special (i) ...	200
Third day ..	10—1	Prescribed Text-books—Special (ii) ...	200
Fourth day...	10—1	Prescribed Text-books—Special (iii) ...	200
		Total ...	800

Vidvan — Preliminary

Under Regulation 7—A of Chapter LXI.

Days	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Vernacular Text-books ...	200
Second day...	10—1	Vernacular Composition ...	200
Third day ...	10—1	Prescribed Sanskrit Text-books (I) ...	150
Fourth day...	10—1	Prescribed Sanskrit Text-books (II) ...	150
		Total ...	700

Vidvan—Preliminary.
Under Regulation 7-B of Chapter LXI.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Text-books I ...	175
Second day...	10—1	Composition ...	150
Third day ...	10—1	Prescribed Text Books II ..	175
Fourth day.	10—1	Sanskrit Text-books and Translation ...	100
Total ...			600

Vidvan—Final
Under Regulation 7-A of Chapter LXI.

First day ...	10—1	History of Sanskrit Language and Literature ...	200
Second day..	10—1	Prescribed Sanskrit Text-books ...	200
Third day ...	10—1	Prescribed Vernacular Text-books ...	200
Total ...			600

Vidvan—Final.
Under Regulation 7-B of Chapter LXI.

First day ...	10—1	Prescribed Text-books I ...	175
Second day..	10—1	Do. II ..	175
Third day ...	10—1	History of Language and Literature ..	150
Fourth day ...	10—1	Sanskrit Text-books ...	100
Total ...			600

*Vidvan.**Under Regulation 7-C of Chapter LXI.**Each Language.—***Common to Preliminary—(Vidvan 7-A.)**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Text-books ...	200
Second day.	10—1	Composition ...	200

Common to Final—(Vidvan 7-A.)

Third day ...	10—1	Prescribed Text-books ...	200
Total ...			<u>600</u>

*Vidvan.—Preliminary.**Under Regulation 7-D of Chapter LXI.*

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Text-books in Poetry & Prose	200
Second day...	10—1	Composition ...	100
Third day ...	10—1	Prescribed Text-books relating to Grammar ...	200
Fourth day...	10—1	History of the Tamil Country ...	100
Total ...			<u>600</u>

908 TIME-TABLES FOR THE AFZAL-UL-ULAMA [APP. EXAMINATION.

Vidvan—Final.
Under Regulation 7-D of Chapter LXI.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Prescribed Text-books in Poetry I ...	150
Second day...	10—1	Prescribed Text-books in Poetry II ...	150
Third day ...	10—1	Prescribed Text-books relating to Advanced Grammar, Prosody and Poetics I	150
Fourth day...	10—1	Prescribed Text-books relating to Advanced Grammar, Prosody and Poetics II	150
Fifth day ...	10—1	History of Language and Literature ...	100
Sixth day ...	10—1	Inscriptions ...	100
Total ...			800

Afzal-ul-Ulama—Preliminary.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Tafsir and Hadith ...	100
Second day.	10—1	Fiqh, 'Aqa'id and Mantiq ...	100
Third day ...	10—1	Prose Text-books ...	100
Fourth day.	10—1	Poetry Text-books ...	100
Fifth day ...	10—1	History ...	100
Sixth day ...	10—1	Translation from Arabic into Urdu and vice versa ...	100
Total ...			600

Afzal-ul-Ulama—Final.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Tafsir, Hadith and Ilmul-Hadith ...	100
Second day.	10—1	Fiqh, and 'Usul'-ul Fiqh ...	100
Third day ...	10—1	Prose Text-books ...	100
Fourth day.	10—1	Poetry Text-books ...	100
Fifth day ...	10—1	History ...	100
Sixth day ...	10—1	Translation from Arabic into Urdu and <i>vice versa</i> ...	100
Seventh day.	10—1	Mantiq and Balaghat ...	100
Eighth day.	10—1	Composition in Arabic ..	100
Total ...			800

Munshi-I-Fazil—Preliminary.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Persian Text-books ...	100
Second day.	10—1	Urdu Text-books ...	100
Third day ..	10—1	Translation from Persian into Urdu ...	100
Fourth day.	10—1	Translation from Urdu into Persian ...	100
Fifth day ...	10—1	Composition in Persian ...	100
Sixth day ..	10—1	Arabic Text-books ...	100
Total ...			600

910 **TIME-TABLES FOR THE CERTIFICATE OF [APP.
PROFICIENCY AND DIP. IN ECON. EXAMINATIONS.**

Munsh-i-Fazil--Final.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Persian Text-books ...	100
Second day.	10—1	Urdu Text-books ...	100
Third day ...	10—1	Translation from Persian into Urdu...	100
Fourth day.	10—1	Translation from Urdu into Persian...	100
Fifth day ...	10—1	History of Persian Language and Literature ...	100
Sixth day ...	10—1	Arabic Text-books ...	100
Seventh day.	10—1	Composition in Persian ...	100
Total ...			700

Certificate of Proficiency.

(A paper of three hours' duration to be answered on the morning of the day following the final examination for Titles.)

Ninth day ...	10—1	One of the subject mentioned in Regulation ...	100
Total ...			100

The Time-table for the B. O. L. Degree Examination.

Part I.—The Scheme of examination and of marks shall be the same as for the B.Sc. (Pass) Degree Examination.

Part II.—The Scheme of examination and of marks shall be the same as for the Final Division of the Examination for any one of the Oriental Titles.

Part III.—The Scheme of examination and of marks shall be the same as for any two of the Subjects prescribed for Certificates of Proficiency in Oriental Learning.

Diploma in Economics.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Economics ...	100
Second day...	10—1	Statistical Methods ...	100
Third day ...	10—1	Recent Economic History and Economic Geography ...	100
Fourth day...	10—1	Rural Economics ...	100
Fifth day ...	10—1	Social Economics ...	100
Sixth day ...	10—1	Special Subject ...	100
Thesis ...			150
Total ...			750

XX] TIME-TABLES FOR THE DIPLOMA IN INDIAN MUSIC EXAMINATION. 911

Diplomas in Modern European Languages.
(*French and German.*)

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Text-books and Grammar (French) ...	100
Second day {	10—12	Translation (French) ...	100
	2—4	Translation (German) ..	100
Third day ...	10—1	Text-books and Grammar (German) ...	100
Total in each language ...			200

Certificate in Librarianship.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Written Examination—Theory ...	60
Second day...	10—1	Practical Examination ...	40
Total ...			100

*** Diploma in Indian Music.**

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Indian Music—Theory—Written Examination—Paper I. ...	100
Second day...	10—1	Do. do. Part II. ...	100
Date and hour will be notified later. {		Indian Music—Practical Examination I. ...	150
		Do. do. II. ...	150
		Total ...	500

* For the Examination of 1939.

Diploma in Geography.

Days.	Hours.	Subjects.	Marks.
First day ...	10—1	Physical Basis of Geography, including the elements of Meteorology, Oceanography and Geomorphology ...	100
Second day.	10—1	General Regional Geography of the World ...	100
Third day ...	10—1	General Regional Geography—I—India.	100
Fourth day...	10—1	General Regional Geography II—Prescribed Continent ...	100
Fifth day ...	10—1	Optional subject:— Historical and Political Geography, or Economic Geography, or Bio-Geography and Anthrope Geography ...	100
Sixth day ...	10—1	Practical Geography ...	100
		Practical Geography Note-books ...	50
		Dissertation (Thesis to be submitted by the candidates by the 15th May in each year after the examination) ...	200
Total ...			850

APPENDIX XXI. UNIVERSITY PUBLICATIONS

I. Text-Books.

<i>Names of Publications.</i>	<i>Price.</i>	<i>Where available.</i>
	Rs. A. P.	
1. S.S.L.C. Text-books 1938		Mr. E. M. Gopala- krishna Kone, 57, Anderson Street, George Town, Madras.
English ...	1 4 0	} Do.
Tamil Group A. ...	1 0 0	
Malayalam Group A. ...	1 0 0	
Kannada Group A. ...	1 0 0	
Sanskrit Group A. ...	1 0 0	
Intermediate Tamil Selec- tions—1938 & 1939 ...	0 12 0 each	} Do.
B.A. Selections in Tamil— 1938 & 1939 ...	1 0 0 each	
ii. Selections in Tamil, Telugu, Kannada and Malayalam for the Intermediate Examination.	1 0 0 each	Registrar's Office.
iii. Selections in Tamil, Telugu and Kannada for the B.A. Degree Examination in 2 Volumes each.	1 0 0 each	Do.
iv. Selections in Malayalam for the B. A. Degree Exa- mination—		
Volume I—3 Parts. }	0 8 0 each	} Do.
Volume II—3 Parts. }	part	

II. Other Publications.

GENERAL-LECTURES, THESES, ETC.

<i>Names of Publications.</i>	<i>Year of Publica- tion.</i>	<i>Price.</i>	<i>Where available.</i>
		Rs. A. P.	
1. Dravidic Studies—			
Volume I ...	1919	0 2 0	The Superintendent Govt. Press, Moun Road, Madras.
Volume II ...	1919	0 8 0	Do.
Volume III ...	1919	0 12 0	Do.
Bound Vol. I-III	1928	0 4 0	Do.

Names of Publications.	Year of Publication.	Price.			Where available.
		Rs.	A.	P.	
2. History of Sri Valshnavas by Mr. R. Gopinatha Rao.	1928	0	10	0	The Superintendent, Govt. Press, Mount Road, Madras.
3. Psychological Tests of Mental abilities by Dr. A. S. Woodburne.	1924	2	8	0	Do.
4. A study of the Optical Properties of Potassium Vapour by Dr. A. L. Narayan.	1925	1	12	0	Messrs. C. Coomaraswami, Naidu & Sons, G.T., Madras.
5. Absorption Spectra and their bearing on the structure of atoms and molecules by Dr. A. L. Narayan.	1925	0	8	0	Do.
6. Investigations on the molecular scattering of light by Dr. K. R. Ramanathan.	1925	1	12	0	Do.
7. The Kavari, the Mukari and the Sangam Age, by Mr. T. G. Aravamudan.	1925	2	4	0	Do.
8. Dravidic Studies—No. IV—On the Octaval System of Reckoning in India by Dr. Mark Collins.	1926	0	12	0	Do.
9. Stone Age in India by Mr. P. T. Srinivasa Ayyangar.	1928	1	0	0	Do.
10. Anatomical and Taxonomic Studies of some Indian Fresh and Amphibious Gastropods by Mr. H. Srinivasa Rao, M.A., D.Sc.	1926	1	4	0	Do.
11. India through the Ages by Dr. Sir Jadunath Sirkar, Kt.	1928	1	8	0	Do.
12. Political Theory of the Govt. of India by Mr. M. Ratnaswami.	1928	1	0	0	Do.

Names of Publications.	Year of Publication.	Price.			Where available.
		Rs.	A	P.	
13. Ante-natal, Natal, Neo-natal mortality of Infants—Dr. A. Lakshmanaswami Mudaliyar.	1928	2	0	0	Messrs. C. Coomaraswami Naidu & Sons, G. T., Madras.
14. Critical Survey of the Malayalam Language and Literature by Mr. A. Krishna Pisharoti.	1927	0	8	0	Do.
15. Records of the Indian Museum, Vol. xxxi—Part I—Mr. K. S. Padmanabha Ayyar.	1929	1	0	0	Do.
16. Restricted Relativity by the Rev. D. Ferrolì, S.J., D.Sc.	1929	4	0	0	Do.
17. Tamil Sangam Age—Mahamahopadhyaya V. Swaminatha Ayyar.	1934	1	0	0	Do.
18. Rasa and Dhvani—Dr. A. Sankaran.	1929	1	12	0	Do.
19. Essay on the Origin of South Indian Temple by Dr. N. Venkataramanayya.	1930	1	8	0	Do.
20. New Light on Fundamental Problems by Dr. T.V. Seshagiri Rao Naidu	1932	3	0	0	Do.
21. Indian Currency system, 1835-1926 by Sir J. C. Coyajee, Kt.	1930	5	0	0	Do.
22. Political Theory of Imperialism by Mr. K. Zachariah.	...	0	8	0	Do.
23. The Problems of World Economy by Prof. V.G. Kale.	1931	2	0	0	Do.
24. Evolution of Hindu Administrative Institutions in South India, by Dr. S. Krishnaswami Ayyangar.	1931	6	0	0	Do.

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INDEX.

	PAGE.
Admission Test for O.T. Examination	250
Admission to University Courses and Examinations ...	20, 24, 52
Admission of holders of S. S. L. C. to University courses of Studies	20
Admission of holders of E. S. L. C. to University courses of Studies	23
Age Limit	20
Conditions of admission to the Intermediate Examination ...	25
Exemption from age limit	20
Conduct of examinations	28
Annual Certificates.—	
Conditions of grant of	50
Forms	831
Award of prizes for publication of works in Dravidian Languages	851
B.A. Degree Examination—	
Admission to	73
Award of post graduate certificate	100
B. A.'s in Arts Subjects to qualify for B. Sc.	145
B. A.'s in Science Subjects to qualify for B. Sc.	144
B. A.'s in Mathematics to qualify for B. Sc.	144
B. A.'s qualified for M.A. under the old Regulation 210 B ...	283
Candidates who completed 1st year's course under the old Regulations to complete the course under the existing Regulations	289
Candidates may appear for whole Examination or for parts ...	99
Candidates permitted to reappear for, with an additional language or optional Group	99
Classification of successful candidates	99
Courses of study	73
Divisions of the Examination	97
Eligibility for the Degree	98
Extension of B.A. Degree Examination under old Regulation. ...	289
Form of annual certificates	832
Marks qualifying for a pass	98
Scheme of examination	80-96
Students for want of progress certificates to undergo additional instruction	51
Subjects for Examination—	
Part I—English	73
Part II—A Second Language	74
Part III—Optional Group—	
(1-a) Mathematics	75
(1-b) Do.	75
(ii) Mathematics (Main and Subsidiary) and Physical and Natural Sciences	76
Physics	76
Chemistry	76

B.A. Degree Examination—*contd.*

Botany, Zoology, Geology and Physiology	77
Mechanical Engineering	...	...	77
Electrical Engineering	...	...	77
(iii-a) Philosophy	...	...	77
(iii-b) Philosophy	...	...	77
(iv-a) History and Economics	...	...	78
(iv-b) Economics and History	...	...	78
(v) Languages other than English	...	...	79
(vi) Indian Music	...	...	80
(vii) Geography	...	...	80
Courses of Study in Dravidian Languages, Group (v)			425
Do Urdu	...	...	441
Do Arabic or Persian (Main)	...	...	441
Do do. (Subsidiary)	...	...	442
Do Oriya or Marathi	...	...	442
Do Greek or Latin	...	...	442
Do French or German...	...	...	442
Do Hebrew	...	...	443
Syllabus in Mathematics	...	...	369
Do do. Group (i-a)	...	...	369
Do do. Group (i-b)	...	...	372
Do do. Group (ii-a) Main	...	...	369
Do Physics —Main	...	...	379
Do Chemistry do	...	...	386
Do Botany do	...	...	388
Do Zoology do	...	...	391
Do Geology do	...	...	393
Do Physiology do	...	...	395
Do Mathematics—Subsidiary	...	...	395
Do Physics do	...	...	396
Do Chemistry do	...	...	397
Do Botany do	...	...	399
Do Zoology do	...	...	399
Do Geology do	...	...	401
Do Physiology do	...	...	401
Do Mechanical Engineering as a Subsidiary subject			
to Physics	...	...	404
Do Electrical Engineering as a Subsidiary subject			
to Physics	...	...	406
Do (iv-a) General Indian History	...	...	411
Do English Constitutional History	...	...	414
Do European History	...	...	416
Do Economics	...	...	418
Do Political Science	...	...	419
Do (iv-b) Economics—General	...	...	421
Do do Special	...	...	421
Do Modern Economic History of England and India.	...	...	422
Do Sanskrit (Main)—Group (v)	...	...	422
Do do Subsidiary—Group (v)	...	...	423
Do do Grammar—Group (v)	...	...	423
Do Comparative Grammar of the Dravidian Languages	...	...	425

	PAGE.
B.A. Degree Examination—<i>contd.</i>	
Syllabus in History of the Tamil Language	427
Do do Telugu Language	430
Do do Kannada Language	432
Do do Malayalam Language	435
Do Early South Indian History...	437
Do Indian Music ...	444
Do Geography ...	446
Text-Books in Mathematics (i-b)	374
Do Physics —Main	385
Do Chemistry— do	387
Do Botany do	391
Do Zoology do	392
Do Geology do	395
Do Physics (Subsidiary)	397
Do Chemistry do	398
Do Zoology do	400
Do Geology do	401
Do Physiology do	402
Do Mechanical Engineering	406
Do Electrical Engineering ...	408
Do Philosophy ...	409
Do General Indian History ...	413
Do English Constitutional History	415
Do European History ...	417
Do (iv-a) Economics ...	419
Do Political Science ...	421
Do (iv-b) Economics—Special	421
Do Modern Economic History	422
Do Indian Music ...	445
Do English and Languages for 1938	448
Do do do 1939	467
Do do do 1940	474
Time-tables for ...	858
B.A. (Hons.) Preliminary—	
Text-books in English ...	482
B.A. (Honours) Degree Examination—	
Admission to Final Examination ...	124
Admission to Preliminary Examination ...	124
Appearance permitted only once ...	123
B.A.'s should undergo 2 years' course at college ...	101, 123
B.A.'s to qualify for Honours Degree under Transitory Regulation ...	282
B.A. (Hons.) in Science Branches permitted to qualify in an additional Science Branch ...	282
B. Sc.'s in Mathematics may appear for B.A. (Hons). ...	102, 123
Candidates recommended for B.A. Degree ...	127
Candidates unable to present for B. A. (Hons.) may appear privately for B. A. ...	127
Classification of successful candidates ...	126
Courses of study for ...	103, 113

B.A. (Hons.) Degree Examination—*contd.* PAGE.

Divisions of the Examination	...	...	125
Failed candidates may appear for B.A. privately	...	...	127
Form of annual certificates for	...	...	833
Marks qualifying for a pass in the Preliminary Examination.	...	...	124
Marks qualifying for a pass in the Final Examination	...	...	124
Examination in Physical and Natural Sciences, how long held	...	...	282

Subjects for Examination—

Branch (i) Mathematics	...	...	103
" (ii) Philosophy	...	...	105
" (iii) History, Economics and Politics	...	...	106
" (iv) Economics and Politics or History	...	...	107
" (v) Two languages other than English	...	...	108
" (vi) English Language and Literature	...	...	109
" (vii) Sanskrit Language and Literature	...	...	110
" (viii) Arabic	...	...	111
Time limit for appearance at Final Examination	...	...	123
Time-tables for	...	...	868
Syllabus in Mathematics	...	...	483
Do. Philosophy	...	...	498
Do. History, Economics & Politics	...	...	521
Text-books in Mathematics	...	...	484, 485, 488, 489, 490, 492, 494, 495, 496, 497
Do. Philosophy	...	...	513
Do. Indian History	...	...	521
Do. English Constitutional History	...	...	521
Do. Politics—General	...	...	532
Do. Economics	...	...	534
Do. English Language & Literature for 1938	...	...	545
Do. do do 1939	...	...	556
Do. do do 1940	...	...	559
Do. Sanskrit Language & Literature for 1938	...	...	551
Do. do do 1939	...	...	557
Do. do do 1940	...	...	559
Do. Arabic Language & Literature for 1938	...	...	555
Do. do do 1939	...	...	557
Do. do do 1940	...	...	561
Do. Br. VI—Two Languages other than English	...	...	541-545
Do. Br. XI—A Dravidian Language & its Literature	...	...	561-587

B. Com. Degree Examination—

Classification of successful candidates	...	...	226
Conditions of admission	...	...	223
Marks qualifying for a pass in the Preliminary Examination.	...	...	226
Subjects for " Examination" Final	...	...	226
Subjects for " Examination" ...	...	...	224

	PAGE.
B. E. Degree Examination—	
Classification of successful candidates	212
Form of Annual Certificates for	888
Marks qualifying for a pass	212
Preliminary qualification and duration of course	207
Standard of questions	209
Subjects for Civil Branch	210
Subjects for Mechanical Branch	210
Subjects for Electrical Branch	211
Time-tables for	902
Syllabus for Civil Branch	676
Do Mechanical Branch	687
Do Electrical Branch	690
B. L. Degree Examination—	
Classification of successful candidates	173
Eligibility for the Degree	172
Exemption from re-examination in the subjects already passed.	173
F.L. Certificate necessary	174
Form of annual certificates for	835
Marks qualifying for a pass	178
Subjects for	172
Time-table for	890
Text-books for	635
B. Sc. Degree Examination—	
Admission to	133
Appearance at Examinations—whole or for parts	142
B. A.'s in Science Subjects to qualify for	144
B. A.'s in Mathematics to qualify for	144
B. A.'s in Arts subjects to qualify for	145
B.Sc.'s to qualify for M.Sc.	167
Candidates failed in Honours recommended for the degree	165
Classification of successful candidates	148
Courses of study	183
Eligibility for the degree	142
Form of annual certificates for	833, 834
Marks qualifying for a pass	143
Scheme of examinations	135
Subjects for Examination	133
Time-tables for	875
Undergraduates proceeding to B. Sc.	183
Syllabus in Mathematics (Main & Subsidiary)	590
Do Physics (Main)	590
Do do (Subsidiary)	593
Do Mechanical Engineering and Electrical Engineering as subsidiary subjects to be taken with Physics	594
Do Chemistry (Main)	594
Do do (Subsidiary)	596
Do Botany (Main)	596
Do do (Subsidiary)	598

	PAGE.
B. Sc. Degree Examination—<i>contd.</i>	
Syllabus in Zoology (Main)	598
Do do (Subsidiary)	599
Do Geology (Main)	599
Do do (Subsidiary)	601
Text-books	604
B.Sc. (Honours) Degree Examination—	
Admission to the Final Examination	146, 162
Appearance permitted only once	163
B.Sc.'s should undergo 2 years' course	147, 166
Candidates failing in Honours may appear for B.Sc. privately.	165
Candidates recommended for B.Sc. Degree	165
Classification of successful candidates	164
Courses of study	147
Divisions of examination	164
Eligibility for the degree	162
Examination in Part I.	162
Examination in Subsidiary Subjects	162
Form of annual certificates for	833, 834
Laboratory Note Book	162
Marks qualifying for a pass	163
Qualifications for admission to	146
Scheme of examinations	155-161
Subjects for Examination—	
Part I—English or French or German	147
Part II—Optional Subjects—	
Branch i. Mathematics	148
" ii. Physics	149
" iii. Chemistry	150
" iv. Botany	151
" v. Zoology	152
" vi. Geology	153
Time limit for appearance at Final Examination	163
Time-tables for	881
Syllabus in Mathematics	608
Do Physics	612
Do Biochemistry	621
Do Geology (Main)	627
Text-books in Physics	620
Do Chemistry	622
Do Zoology	624
Do Geology	627
Do English	634
B. Sc. Degree Examination in Agriculture—	
Admission to	215
Classification of successful candidates... ..	218
Courses of study for	216
Examination, both written and practical	216
Form of annual certificates for	838
Marks qualifying for a pass	217

B.Sc. Degree Examination in Agriculture—*contd.*

	PAGE.
Time-Tables for	886
Transitory Regulations for	218
Syllabus in Animal Hygiene	717
Do Agriculture	708
Do Agricultural Botany	710
Do do Chemistry	711
Do do Zoology	714
Do do Engineering	716
Text-books	718

B. S. Sc. Degree Examination—

Academic Terms	204
Admission to	201
Classification of successful candidates	206
Conditions of eligibility for appearing at the Examination	204
Courses of study for	202
Divisions into two parts	204
Forms of certificates for	847
Marks qualifying for a pass in Parts I and II	205
Do. in whole Examination	206
Subjects for	205
Syllabus for Sanitary Science	662
Term certificates	205
Time-tables for	900

B. V. Sc. Degree Examination—

Admission to Final Examination	222
Course of study	220
Classification of successful candidates	221
Duration of the Course	219
Eligibility for the Degree	219
Graduates in Science subjects exempted in certain subjects	220
Examination by subjects	220
Marks qualifying for a pass	223
Syllabus	725
Text-books	758

Certificate Course in Librarianship—

Admission fee	270
Application for admission to	369
Attendance	270
Course of study	268
Duration of the Course	270
Eligibility for certificate	268
Form of annual certificates for	888
Marks qualifying for a pass	270
Qualification for admission	269
Scheme of Examination	270
Time-tables for	911
Candidates prevented from attendance at Convocation of 1916	
by Cyclone	281
Calendar for 1937-38	1-18
Centres for Examinations	82

	PAGE.
Certificates—	
Annual—form of	52,891
Exemption from	53
Medical Inspection	47
Pass	30
Transfer	47
Certificates of Proficiency in Oriental Learning—	
Admission to Examination for	257
Approval of institutions	257
Candidates may qualify for another optional	258
Classification of successful candidates... ..	257
Course of studies—2 years	257
Day of Examination	44
Duration of Paper	257
Form of certificate for Examination	836
Holders of Titles under Old Regulations can appear for Examination for	285
Papers set and answered in English	257
Subjects for Examination	256
Time-Table	910
Syllabus in Literary criticism as applied to Sanskrit Literature.	815
Do Indian Philosophy in its relation to Western Philosophy	816
Do Indo-European Philology with special reference to Sanskrit	816
Do South Indian Languages and Literature in their bearing on Ancient Indian History and Culture	818
Do for Hindu Law and Jurisprudence	818
Do for Muhammadan Law and Jurisprudence	819
Do in Literary Criticism as applied to Persian and Indo-Persian Philology	821
Do in Literary Criticism as applied to Arabic	820
Do in Dravidian Philology with special reference to the Dravidian Languages in South India	822
Combination of attendances	49
Date of payment of Exam. fees, etc.	39
Degree of Doctor of Science—	
Application, conditions of	170
Declaration to accompany thesis	171
Eligibility of candidates	170
Examination of thesis	171
Last date for submission of thesis	171
Notification of result	171
Publication of thesis	172
Diploma in Economics—	
Application to enter upon the course for	264
Attendance	265
Classification of successful candidates... ..	266
Competency of the Syndicate to suspend the course and examination	266

	PAGE
Diploma in Economics—<i>contd.</i>	
Courses of study	265
Duration of course	265
Eligibility for	264
Fee for the course	265
Form of attendance certificate for examination	838
Qualification for admission to	265
Time-table for examination	910
Diplomas in French and German—	
Attendance	267
Classification of successful candidates...	267
Competency of the Syndicate to suspend the course and examination	268
Date of examination	267
Duration of the course	267
Eligibility for	266
Fee for the course	268
For whom intended	267
Form of attendance certificates for Examinations	838
Qualification for admission to	266
Syllabuses and text-books for	823
Time-table for Examinations	911
Diploma in Geography—	
Application for admission to the Course	271
Attendance	272
Course of Study	271
Duration of the Course	272
Eligibility for Diploma	271
Fee for the Course	272
Form of annual certificates for	838
Marks qualifying for a pass	273
Qualification for admission to	271
Scheme of Examination	272
Syllabus and text-books for	824
Time-tables for	912
Diploma in Indian Music—	
Application for admission to the Course	274
Attendance	274
Course for whom intended	274
Course of Study	274
Duration of the Course	274
Eligibility for Diploma	273
Form of annual certificates	838
Marks qualifying for a pass	275
Qualification for admission	274
Scheme of Examination	275
Syllabus	827
Time-tables	911

	PAGE.
Diploma in Midwifery—	
Condition of admission	199
Course of Study	200
Fee for	201
Form of annual certificates	847
Marks qualifying for a pass	201
Subjects for Examination	200
Time-table for Examination	898
Diplomas	81
Doctor of Laws—	
Application	181
Examination of Thesis	182
Notification of success	182
Oral Examination	182
Original contribution to Science or Study of Law	181
Publication of Thesis	182
Report	182
Testimonials required	181
Thesis for	181
Doctor of Letters—	
Conditions of admission	181
Eligibility to appear	181
Submission of thesis	182
Date of submitting thesis	182
Valuation of thesis	182
Publication of thesis	182
Examinations—	
Approval and publication of results... ..	30
Chairman of Boards and their duties	30
Conduct of	29
Date of commencement of	39
Date of submission of applications	39
Date of submission of attendance certificates	39
Date of publication of results	39
Examination Boards	30
Fees for	31
Gazetted holidays	28
Held twice in a year	28
Manner of publication of successful candidates	30
Nature of Questions	29
Pass certificates	30
Places of	28
Recognition of Examinations of other Universities	27
Special Boards	30
Standard of question papers	29
Examinations of other Universities—	
Recognition of	27
Registration of students as Matriculates	24

Exemption—	PAGE,
Application for—when to be made	59
General conditions of	54, 58
Exemption in Languages (other than English) when and how granted	55
Exemption to <i>bona fide</i> teachers	57
Exemption from attendance certificates for Matric. Examn.	58, 59
" " for Intermediate Examn.	55
" " of passed Intermediates taking additional subject or language.	55
" " attendance certificates for B.A. Examinations	56, 275
" " of B.A.'s taking additional subject or language.	99
" from Preliminary Examination.	123, 124
" " Examn. in a selected language for the B. A. (Hons.) Degree Examn.	117
" " passing Part I English for B. Sc.	143
" " " " B.Sc. (Hons.).	166
" " re-examination in the subject passed for F.L.	173
" " " " subject passed for B.L.	175
" " re-examination in the subject passed for Pre-Registration Examn.	185
" " " in the subject passed for First M.B., B.S.	187
" " " " subject passed for Second M.B., B.S.	189
" of failed candidates in the Final M.B., B.S.	56, 194
" " " for O. T. Examinations.	56
" " " " for Certificate of Proficiency in Oriental Learning	258
Exemption permanent	59
Groups of subjects	20
Ineligible candidates declared eligible on re-scrutiny	23
Marks qualifying for eligibility	21
Moderation Board	21
Publication in the Gazette of eligible candidates	23
Re-appearance at public examination	23
Recognition of certificates issued by Indian States	21
" of Cambridge and Oxford School certificates	25
" of Examinations	25
Rules of eligibility	20
Expulsion of students from college	49
Fees for examinations, etc	31
Final M.B. & B.S. Degree Examination—	
Attendance at recognised courses of Instruction	190, 191, 192
Eligibility for admission	193
Classification of successful candidates	194

	PAGE.
Final M.B. & B.S. Degree Examination—<i>contd.</i>	
Conditions of admission of L. M. P. Diploma holders to the Examination	195
Courses of Study	189
Duration of Course of Study	189
Exemption for failed candidates	194
Forms of certificates for	848
Marks qualifying for a pass	194
Time-table for	898
Transitory Regulation for revised Medical Examination	196
" " for old Medical Examination	277
First Examination in Engineering—	
Classification of successful candidates	209
Form of certificates for	838
Marks qualifying for a pass in	209
Time-table for	901
Syllabus for	669
First Examination in Law—	
Classification of successful candidates	173
Exemption from re-examination	173
Form of annual certificate for	835
Marks qualifying for a pass in	173
Qualification of candidates	172
Subjects for	172
Time-table for	889
Text-books for	635
First M. B. & B. S. Examination—	
Classification of successful candidates	187
Courses of study and Examination	186
Exemption in subjects already passed...	187
Form of certificates for	840
Marks qualifying for a pass in	187
Qualification for admission	186
Time-table for	897
Gazetted Holidays	28
Intermediate Examination in Arts and Science—	
Admission to	64, 70
Candidates with F.A. four-term certificates to appear under certain conditions	276
Candidates permitted to appear offering different set of optional Subjects	72
Candidates under the Old Regulation permitted to continue under the same till 1931	287
Candidates applying for first time	71
Classification of successful candidates	71
Courses of study	65
Form of annual certificates for	831
How Intermediates of Old Regulation can appear for B.A. under New Regulation	288
Marks qualifying for a pass	71
Pass in parts	71
Scheme of Examination	68

	PAGE.
Intermediate in Arts and Science-- <i>contd.</i>	
Subjects for Examination—	
Part I—English	65
Part II—Second Language	66
Part III—Optional subjects	67
Time-tables for	854
Syllabus in Mathematics	316
Do Physics	321
Do Chemistry	325
Do Botany	326
Do Zoology	327
Do Geography	328
Do Agriculture	331
Do Electrical Engineering	333
Do Mechanical Engineering	337
Do Surveying	338
Do Architecture	339
Do Drawing	340
Do Indian Music	341
Do Western Music	343
Do Elements of Commerce	344
Do Accountancy	345
Do Economic Geography	346
Do Economic History	346
Text-books in Physics	324
Do Chemistry	325
Do Botany	326
Do Zoology	327
Do Geography	329
Do Logic	330
Do Histories	330
Do Surveying	339
Do Indian Music	342
Do Western Music	343, 344
Do Commerce	345
Do Accountancy	346
Do Economic Geography	346
Do Economic History	347
Do English and in Languages for 1938	348
Do do do 1939	356
Do do do 1940	363
Transitory Provision	72
L.T. Degree Examination—	
Classification of successful candidates	215
Subjects for Examination	214
Courses of study for	213
Eligibility for admission to the course	213
Form of annual certificate for	213
Marks qualifying for a pass in	214
Qualification of candidates for admission to	213
Scheme of Examination	214
Time-table for	889
Syllabus for Theory and Practice of Education	693
Do Special Subject	694

	PAGE.
L.T. Degree Examination—<i>contd.</i>	
Syllabus for D (1) English ...	696
Do D (2) (a) Child Education ...	697
Do D (2) (b) Mathematics ...	698
Do D (2) (c) Physical Science ...	700
Do D (2) (d) Natural Science ...	700
Do D (2) (e) History ...	701
Do D (2) (f) Geography ...	703
Do D (2) (g) Sanskrit ...	703
Do D (2) (h) Household (Domestic) Science ...	704
M. A. Degree Examination—	
B.A. (Hons.) when to take M.A. Degree ...	127
B.A.'s may qualify for M.A. after post Graduate Course ...	128
Master of Letters—	
Date for submitting thesis ...	130
Eligibility to appear ...	128
Publication of thesis ...	130
Registration ...	129
Submission of thesis ...	129
Valuation of thesis ...	130
M.B. & B.S. Degree Examination—	
Academic terms ...	183
Age limit for admission to College ...	183
Certificate of further study ...	183
Dates of examinations ...	184
Five years' study at College ...	183
Preliminary qualification ...	183
Pre-Registration Examination ...	183
Syllabuses for ...	650
M.D. Degree Examination—	
Admission to ...	196
Approved candidates ...	198
Branches of ...	197
Candidates permitted to qualify in two Branches ...	198
Time-table for ...	898
M.L. Degree Examination—	
Branches of study— ...	176
Classification of successful candidates... ..	180
Eligibility for M.L. Degree ...	176
Marks qualifying for a pass ...	180
Qualification of candidates for ...	176
Time-table for ...	890
Text-books for ...	686
M. O. L.—	
Date of submission of thesis ...	261
Eligibility for the Degree ...	261
Publication of thesis ...	262
Thesis ...	262
Valuation of thesis ...	262

	PAGE.
M.Sc. Degree Examination—	
B. Sc.'s to qualify for M.Sc. ...	167
Date of submission of thesis ...	169
Eligibility for M. Sc. Degree ...	167
Publication of thesis ...	170
Registration of candidates ...	168
Thesis ...	169
Valuation of thesis ...	169
M.S. Degree Examination—	
Admission to ...	198
Approved candidates ...	199
Subjects for ...	199
Time-table for ...	900
Matriculates—	
Register of ...	19
Registration as ...	24
Matriculation—	
Of S.S.L.C. holders ...	19
Of those other than S.S.L.C. holders ...	19
Matriculation Examination—	
Admission of private candidates to ...	60
Conditions of admission to ...	60
Classification of successful candidates ...	60
Courses of study and subjects for ...	60
English ...	60
Second Language ...	60
Mathematics ...	61
Elementary Science ...	62
History and Geography ...	62
Exemption from attendance certificate ...	53, 60
Form of annual certificate for ...	831
Marks qualifying for a pass ...	64
Recognition of schools ...	59
Registration of students passing other examinations ...	19
Scheme of examination ...	63
Time-table for ...	854
Syllabus in Theoretical Geometry ...	295
Do. in Elementary Science ...	298
Do. in History of Great Britain and Ireland ...	302
Do. in Indian History ...	305
Do. in Geography ...	307
Text-books ...	311
Medical Inspection of Students ...	47
Oriental Title Examination—	
Admission test ...	250
Answering of papers ...	250
Candidates for Vidvan Title who passed Preliminary Examination in 1919 ...	255

PAGE.

Oriental Title Examination—*contd.*

Certificate of fitness	...	...	...	250
Classification of successful candidates	...	...	...	251
Conditions of admission to the courses for Oriental Titles	...	...	...	26
Courses of studies—four years	...	...	...	228
" for Adib-i-Fazl	...	...	...	235
" " Afzal-ul-Atibba	...	...	...	237
" " Afzal-ul-Ulama	...	...	...	238
" " Munshi-i-Fazl	...	...	...	234
" " Tabib-i-Kamil	...	...	...	237
" " Siromani	...	...	...	228
" " Vidvan	...	...	...	231
" " Malpan	...	...	...	238
" " Soppar	...	...	...	239
Examination—Preliminary and Final	...	...	...	228
Exemption from certificates	...	...	...	56
Forms of annual certificates for	...	...	...	836
How to apply the regulations to candidates who began courses under the old Regulations	...	...	...	241
Marks qualifying for a pass	...	...	...	251
Names of titles	...	...	...	227
Text-books for 1938	...	...	...	756
Do 1939	...	...	...	785
Do 1940	...	...	...	800
Do 1941	...	...	...	806
Time-tables for	...	...	...	905
Pass certificates	...	...	...	80

Pre-Registration Examination—

Classification of successful candidates	...	...	...	185
Conditions of admission to	...	...	...	184
Courses of study and subjects for	...	...	...	184
Eligibility for admission to	...	...	...	185
Exemption to Science Graduates	...	...	...	185
Exemption in subjects already passed	...	...	...	185
Form of annual certificates	...	...	...	839
Marks qualifying for a pass	...	...	...	185
Time-table for	...	...	...	896
Syllabus	...	...	...	650
Qualification of Medical Inspector	...	...	...	48
Question papers, standard of	...	...	...	29
Register of Matriculates	...	...	...	19

Second M.B. & B.S. Examination—

Appearance in whole or in Parts	...	...	...	188
Classification of successful candidates	...	...	...	189
Duration of the course of study for	...	...	...	187
Exemption in subjects already passed	...	...	...	189
Forms of certificates	...	...	...	841
Marks qualifying for a pass	...	...	...	188
Qualification for admission to	...	...	...	188
Subjects for	...	...	...	188
Time-table for	...	...	...	897

	PAGE.
S.S.L.C. and E.S.L.C. Course—	
Admission of holders of S.S.L.C. to University courses of studies	20
Admission of holders of E.S.L.C. to University courses of studies	23
Age limit	20
Exemption from age limit	20
Groups of subjects	20
Ineligible candidates declared eligible on re-scrutiny	23
Marks qualifying for eligibility	20
Moderation board	21
Publication in the Gazette of eligible candidates	23
Reappearance at public examination	23
Recognition of certificates issued by Indian States	21
Recognition of Cambridge and Oxford School certificates	25
Rules of eligibility	20
Temporary recognition of examinations of other Universities.	25
Rules for award of prizes for publication of works on modern subjects in Dravidian Languages	851
Syllabuses—	
Matriculation	295
Intermediate	316
B.A. Degree	369
B.A. (Honours)	483
B. Sc.	590
B. Sc. (Hons.)	608
B. Sc. in Agriculture	708
B. V. Sc.	725
L.T.	693
Medical Examinations	650
B.S. Sc.	662
Engineering	669
Certificates of Proficiency in Oriental Learning... ..	756
Diploma Courses in French and German	823
Diploma Course in Geography	824
Diploma Course in Indian Music	827
Text-books for Examinations—	
Matriculation	311
Intermediate	348
B.A. Degree	448
B.A. (Hons.)	527
B.Sc.	604
B. Sc. (Hons.)	684
B. Sc. in Agriculture	718
B.V.Sc.	753
Law	685
O.T.	756
Diploma Course in Geography	825
Diploma Courses in Modern European Languages	828

	PAGE
Thesis—	
For Doctor of Laws	181
For " of Science	171
For Master of Oriental Learning	261
For Master of Science	169
Titles and Certificates of Proficiency in Oriental Learning—	
Regulations for	227
Transfer certificates and regulations relating thereto ...	47
Academic year	49
Certificate of Medical Inspection	47
Combination of attendances	49
Conditions for grant of annual certificate	50
Expulsion of students from College	49
Issue of transfer certificates	48
Students for want of progress certificate to undergo addi- tional instructions	51
Valid reasons for transfer	50
Transitory Regulations	275
University Publications	913

